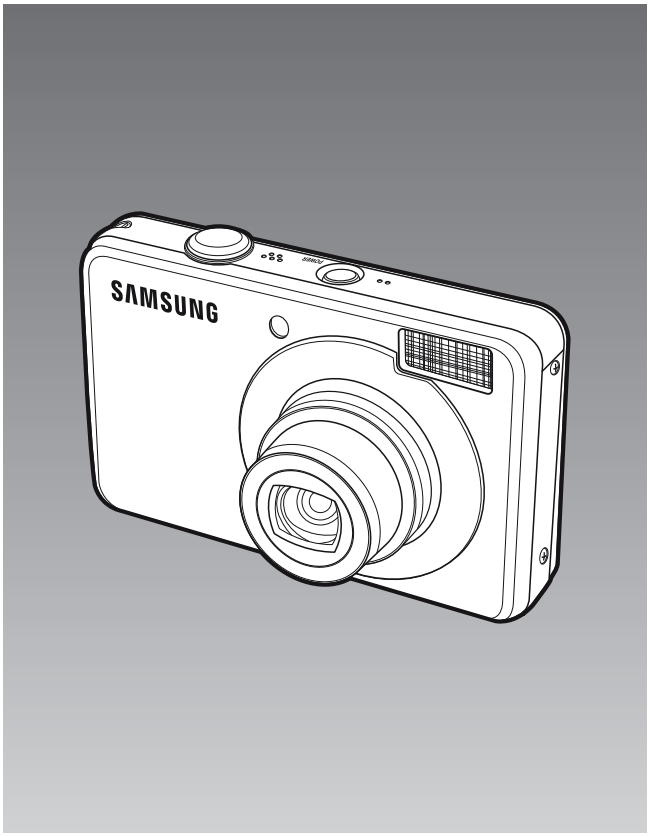
DIGITAL CAMERA

SAMSUNG PL 50

B Type : SAMSUNG SL202

SERVICE Manual

DIGITAL CAMERA



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EC-PL50

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1. Product Specification

1-1 Specifi cations

Image Sensor
- Type : 1/2.33” CCD
- Effective Pixel : Approx. 10.2 Mega-pixel
- Total Pixel : Approx. 10.3 Mega-pixel

Lens
- Focal Length : SAMSUNG Lens f = 6.2 ~ 18.6mm
  (35mm film equivalent : 35 ~ 105mm)
- F No. : F2.8(W) ~ F5.2(T)
- Digital Zoom : ·Still Image mode :1.0X ~ 3.0X
- Play mode : 1.0X ~ 11.4X (depends on image size)

Image Stabilization
- DIS (Digital Image Stabilization)

LCD Monitor
- 2.7” color TFT LCD (230,000 dots)

Focusing
- Type : TTL auto focus (Multi AF, Center AF, Face Detection AF)
- Range

	Normal	Macro	Auto Macro
Wide	80cm ~ Infinity	5cm ~ 80cm	5cm ~ Infinity
Tele		50cm ~ 80cm	50cm ~ Infinity

Shutter
- Auto : 1/8 ~ 1/1,500 sec., Program : 1 ~ 1/1,500 sec.,
- Night : 8 ~ 1/1,500 sec., Firework : 4 sec.

Exposure
- Control : Program AE
- Metering : Multi, Spot, Center-Weighted,
  Face Detection AE
- Compensation : ±2EV (1/3EV steps)
- ISO : Auto, 80, 100, 200, 400, 800, 1600

Flash
- Modes : Auto, Auto & Red-eye reduction, Fill-in
  flash, Slow sync, Flash off, Red Eye Fix
- Range : Wide : 0.2m ~ 4.5m, Tele : 0.5m ~ 2.4m
- Recharging Time : Approx. 4 sec

Sharpness
- Soft+, Soft, Normal, Vivid, Vivid+

White Balance
- Auto, Daylight, Cloudy, Fluorescent_H, Fluorescent_L, Tungsten, Custom
  Voice Recording - Voice Recording (max. 10 hours)
- Voice Memo in Still Image (max. 10 sec.)

Date Imprinting
- Date, Date & Time, Off (user selectable)

Shooting
- Still Image

·Mode : Auto, Program, DIS, Photo Help Guide, Beauty Shot, Scene, Smart Auto
·Scene : Frame Guide, Night, Portrait, Children, Landscape, Close-up, Text, Sunset, Dawn,
Backlight, Firework, Beach & Snow
·Shooting : Single, Continuous, Motion Capture, AEB
·Smart Auto : Macro, Macro Text, Macro Colour, White, Landscape, Action, Tripod, Night, Night
Portrait, Backlight, Backlight Portrait, Portrait
·Self-timer : 10 sec., 2 sec., Double, Motion Timer

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- Movie Clip
· With Audio or without Audio (user selectable, recording time : max 2 hours)
·Size : 640x480, 320x240
· Frame rate : 30 fps, 15 fps
· 3X Optical Zoom and Mute in Zooming
· Movie Editing (Embedded): Pause during recording, Still Image Capture

Storage

- Media
·Internal memory : About 9MB flash memory
· External memory (Optional) :
MMC card (Up to 1GB guaranteed)
SD card (Up to 2GB guaranteed)
SDHC card (Up to 8GB guaranteed)
- File Format
·Still Image : JPEG (DCF), EXIF 2.21, DPOF 1.1, PictBridge 1.0
·Movie Clip : AVI (MJPEG)
·Audio : WAV
- Image Size

10M	9M	7M	7M	5M	3M	1M
3648X 2736	3648X 2432	3648X 2052	3072X 2304	2592X 1944	2048X 1536	1024X 768

- Capacity (1GB Size)

	10M	9M	7M	7M	5M	3M	1M
Super Fine	About 182	About 199	About 251	About 251	About 333	About 493	About 1234
Fine	About 333	About 361	About 440	About 444	About 576	About 812	About 1668
Normal	About 471	About 510	About 611	About 617	About 791	About 1064	About 1870

※ **These figures are measured under Samsung standard conditions and may vary depending on shooting conditions and camera settings.**

Effect

- Effect : Photo Style Selector, Image Adjust (Sharpness, Contrast, Saturation)
- Editing : Resize, Rotate, Photo Style Selector, Image Adjust (ACB, Face Retouch, Red Eye Fix, Brightness, Contrast, Saturation, Add Noise)

Image Play

- Type : Single image, Thumbnails, Multi slide show, Movie Clip
※ Multi slide show : Slide show with Effect & Music

Interface

- Digital output connector : USB 2.0
- Audio : Microphone: Mono, Internal Speaker: Mono
- Video output : NTSC, PAL (user selectable)
- DC power input connector : 4.2 V

Power Source	- Rechargeable battery : SLB-10A, 3.7V (1050mAh) - Charger: SAC-47 ※ Included battery may vary depending on sales region.
Dimensions (WxHxD)	- 89 X 56.5 X 21.5mm (excluding protrusions)
Weight	- Approx. 116.1g (without batteries and card)
Operating Temperature	- 0 ~ 40°C
Operating Humidity	- 5 ~ 85%
Software	- Samsung Master, Adobe Reader

※ Specifications are subject to change without prior notice.
※ All trademarks are the property of their respective owners.

1-2 Instructions on how to use the memory card

The camera can use SD/SDHC Memory Cards and MMC (Multi Media Cards).

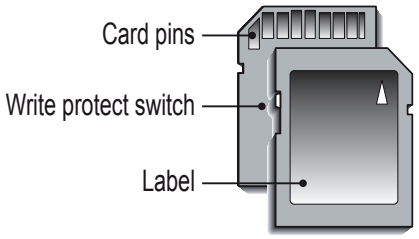


Fig. 1-1 SD (Secure Digital) memory card

- The SD/SDHC memory card has a write protect switch that prevents image fi les from being deleted or formatted. By sliding the switch to the bottom of the SD/SDHC memory card, the data will be protected. By sliding the switch to the top of the SD/SDHC memory card, the data protection will be cancelled.

- Slide the switch to the top of the SD/SDHC memory card before taking a picture.

When using a 1GB SD memory, the specifi ed shooting capacity will be as follows. These fi gures are approximate as image capacities can be affected by variables such as subject matter and memory card type.

<Table 1-1>

Recorded image size		Super Fine	Fine	Normal	30 FPS	15 FPS
Still image	10M	About 182	About 333	About 471		
	9M	About 199	About 361	About 510		
	7M	About 251	About 440	About 611		
	7M	About 251	About 444	About 617		
	5M	About 333	About 576	About 791		
	3M	About 493	About 812	About 1064		
	1M	About 1234	About 1668	About 1870		
*Movie clip	**640**				About 07:06	About 13:55
	320				About 26:25	About 49:24

■ The zoom button doesn't use during the movie recording.
The recording times can be changed by the zoom operation.
You can record videos of up to 4GB or 2hours each.

1-3 LCD monitor indicator

■ **The LCD monitor displays information about the shooting functions and selections.**

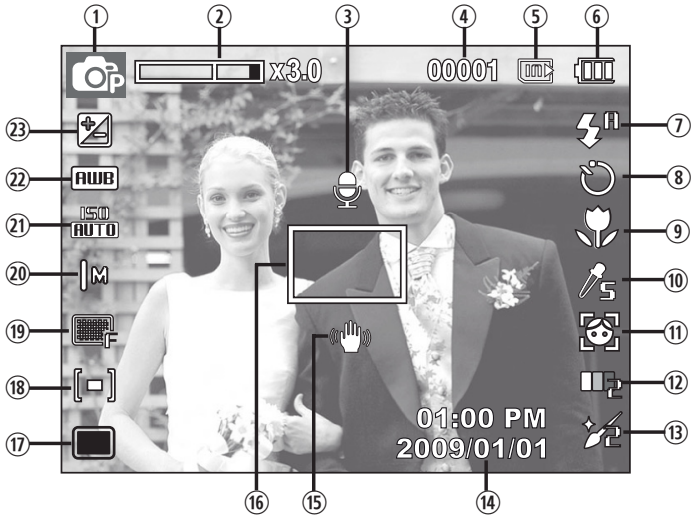


Fig. 1-2 Image & Full Status

No.	Description	Icons
①	Recording mode	
②	Optical / Digital Zoom bar / Digital Zoom rate	x 3.0
③	Voice Memo	
④	Number of available shots remaining	**00001**
	Remaining time	**00:00:00**
⑤	Memory card icon / Internal memory icon	
⑥	Battery	
⑦	Flash	
⑧	Self-timer	
⑨	Macro	
⑩	Photo Style Selector	
⑪	Face Detection	
⑫	Face Tone	

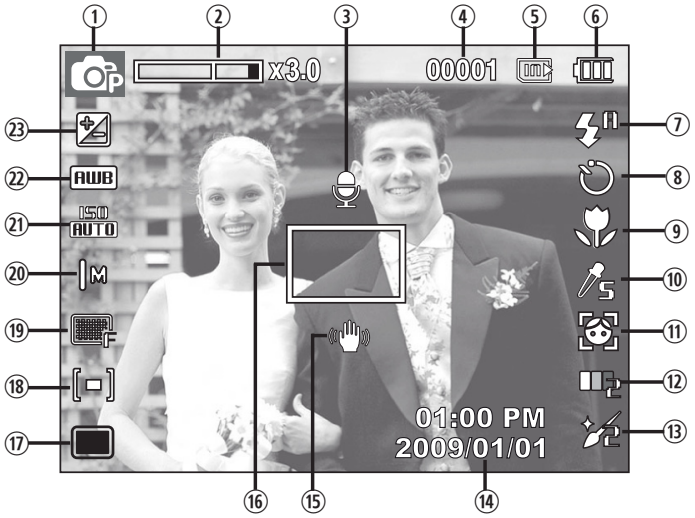


Fig. 1-3 Image & Full Status

No.	Description	Icons
⑬	Face Retouch / Without Sound	
⑭	Date / Time	2009/01/01 01:00 PM
⑮	Camera shake Warning	
⑯	Auto Focus Frame	
⑰	Drive mode	
⑱	Metering	
⑲	Image Quality / Frame Rate	
⑳	Image Size	10M 9M 7M 7M 5M 3M 1M 640 320
㉑	ISO	ISO AUTO ISO 80 ISO 100 ISO 200 ISO 400 ISO 800 ISO 1600
㉒	White Balance	
㉓	Exposure compensation	

1-4 Camera Connection Diagram

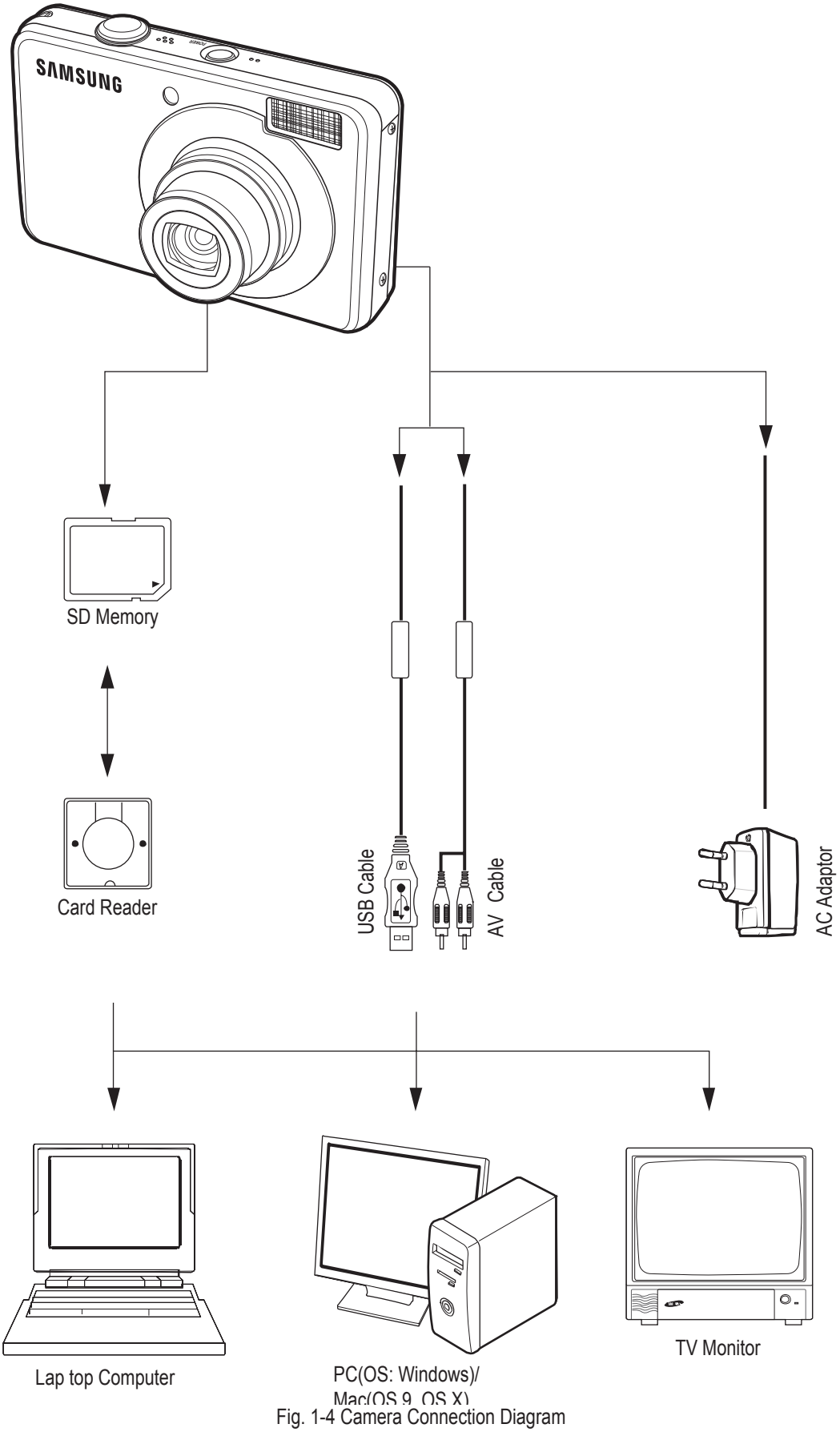


Fig. 1-4 Camera Connection Diagram

1-5 Identifi cation of features

Front & Top

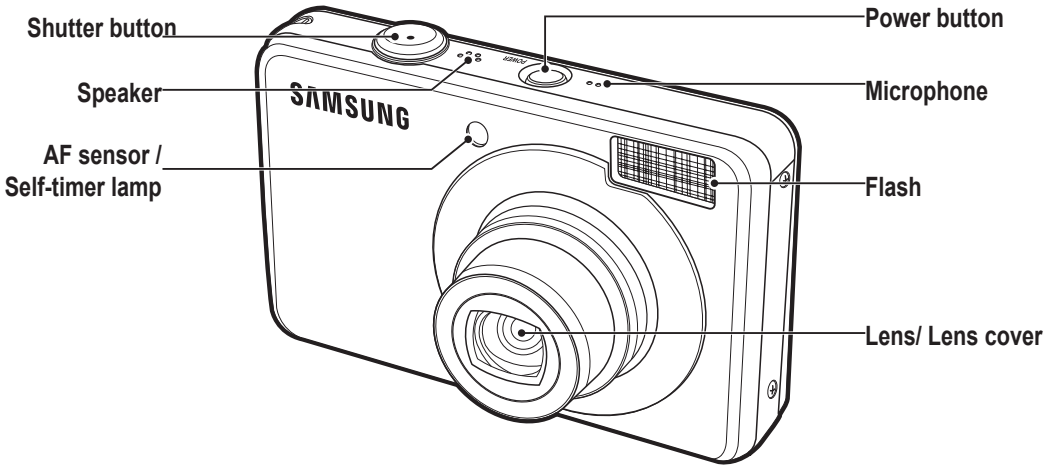


Fig. 1-5 Front & Top

Back

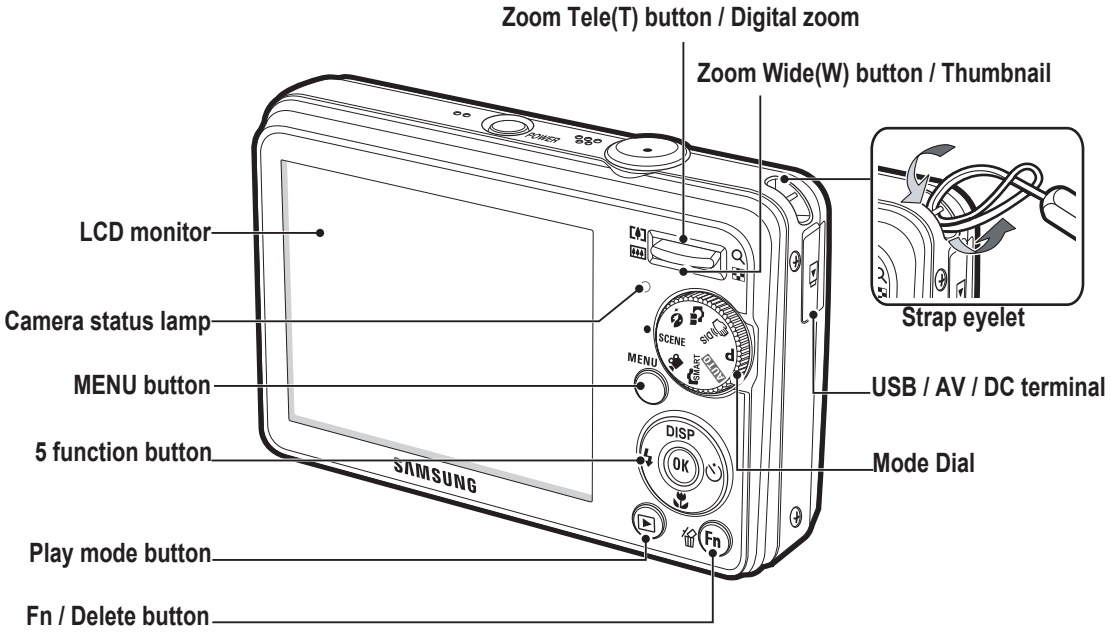


Fig. 1-6 Back

Bottom

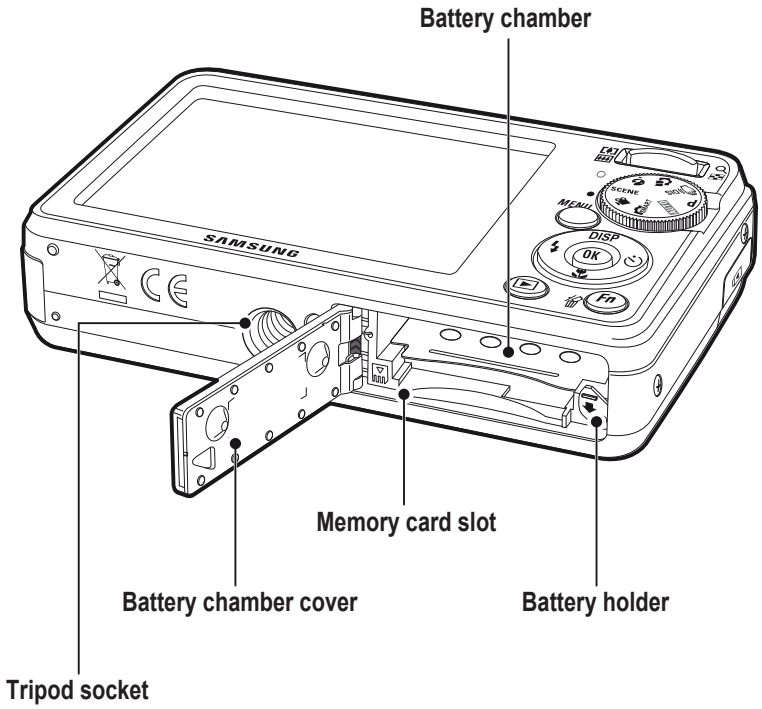


Fig. 1-7 Bottom

Function button

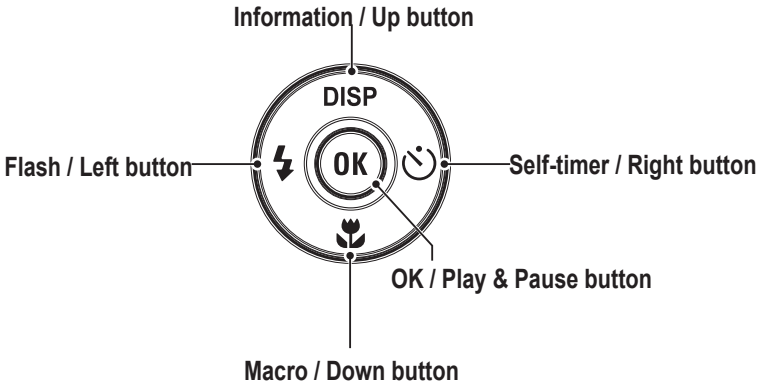


Fig. 1-8 Function button

Memo

2. Operation Instruction & Installation

2-1 Install

2-1-1 System Requirements

<Table 2-1 For Windows>

CPU	PC with processor better than Pentium III 500MHz (Pentium III 800MHz recommended)
RAM	Minimum 256MB RAM (Over 512MB recommended)
OS	Windows 2000 / XP / Vista
Available hard disk space	250MB of available hard disk space (Over 1GB recommend)
The other	• USB port • CD-ROM Drive • 1024x768 Pixels, 16bit color display compatible monitor (24bit color display recommended) • Microsoft Direct X 9.0 or later

⚠ Caution

- **It is not compatible with Windows XP and Vista 64-bit Edition.**
- **Samsung is not responsible for any defects or damages caused by the use of unauthorized computer including an assembled PC.**

<Table 2-2 For Macintosh>

CPU	Power Mac G3 or later
RAM	Minimum 256MB RAM (Over 512MB recommended)
OS	Mac OS 10.3 or later
Available hard disk space	Minimum 256MB RAM (Over 512MB recommended)
The other	• USB port • CD-ROM Drive • 1024x768 Pixels, 16bit color display compatible monitor (24bit color display recommended)

2-1-2 About the software

1) After inserting the CD-ROM provided with this camera into the CD-ROM drive, the following window should automatically run

Fig. 2-1

■ Samsung Master : This is the all-in-one multi media software solution.

You can download, view, edit and save your digital images and movie clips with this software. This software is only compatible with Windows.

■ You should allow 5 ~ 10 seconds for running the automatic setup program according to the capability of your computer. If the frame does not appear, run the [Windows Explorer] and select [Installer.exe] in the CD-ROM Drive root directory.

2-1-3 Setting up the application software

1) To use this camera with a PC, install the application software first.
After this has been done, the stored images in the camera can be moved to the PC and can be edited by an image editing program.

■ You can visit the Samsung web-site through the internet.

http://www.samsungcamera.com : English
http://www.samsungcamera.co.kr : Korean

❶ The auto run frame will display. Click the [Samsung Digital Camera Installer] menu in the Auto run frame.

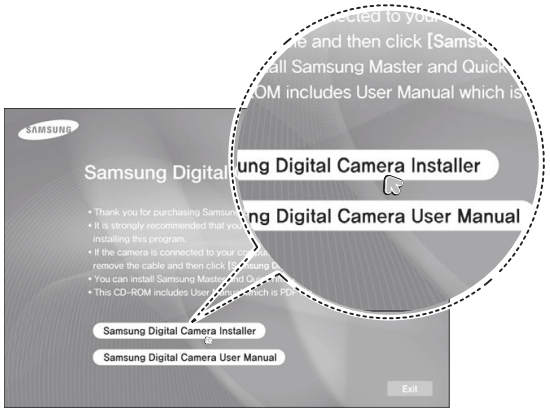


Fig. 2-2

❷ Install DirectX, Samsung Master by selecting a button shown on the monitor.
If a recent version of DirectX has been installed on your computer, DirectX may not be installed.

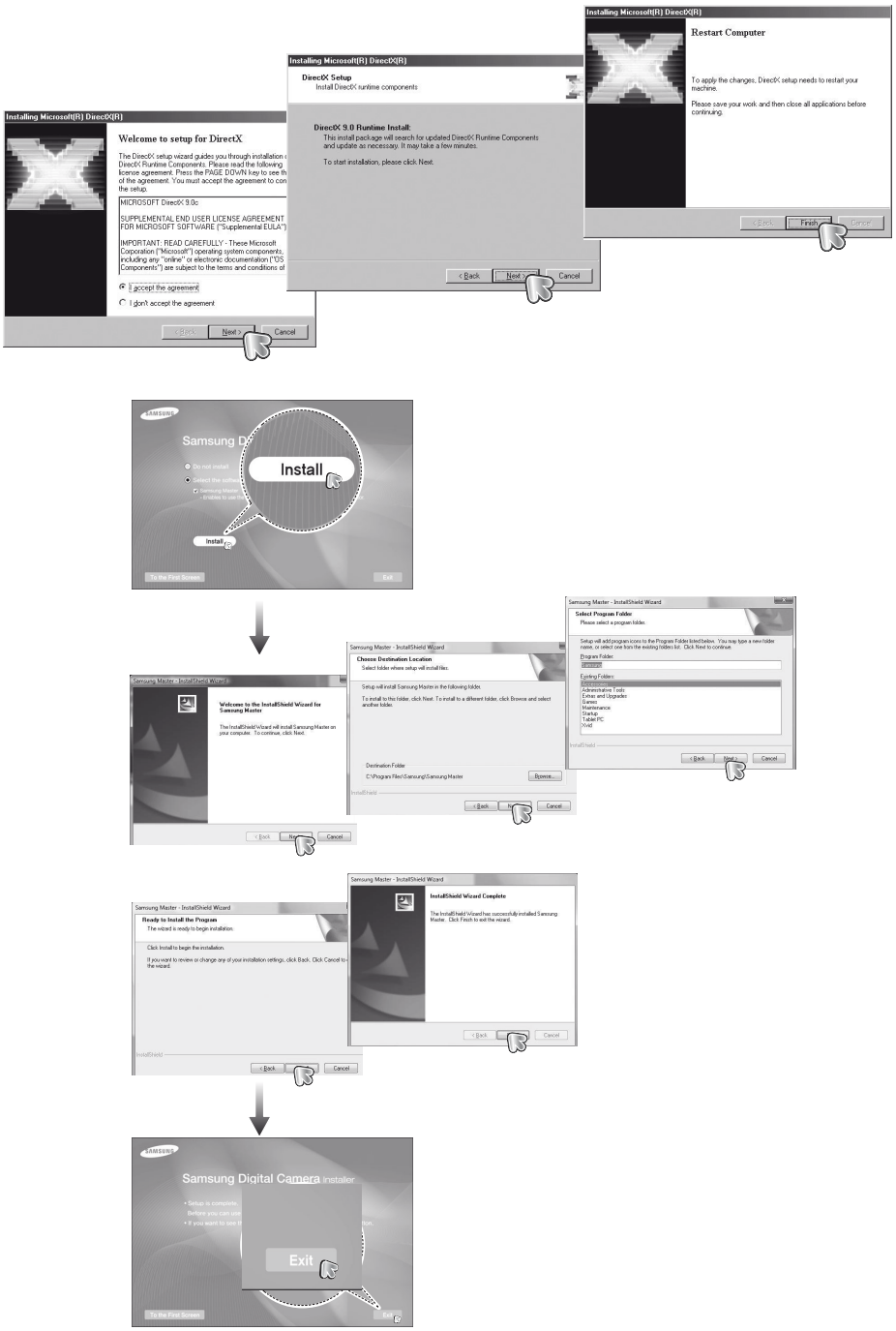

Installing Microsoft(R) DirectX(R)
Welcome to setup for DirectX
I accept the agreement
I don't accept the agreement
Next >
Cancel
DirectX Setup
Install DirectX runtime components
DirectX 9.0 Runtime Install:
This install package will search for updated DirectX Runtime Components and update as necessary. It may take a few minutes.
To start installation, please click Next.
< Back
Next >
Cancel
Restart Computer
To apply the changes, DirectX setup needs to restart your machine.
Please save your work and then close all applications before continuing.
Finish
Samsung D
Install
To the First Screen
Exit
Welcome to the InstallShield Wizard for Samsung Master
Choose Destination Location
Select Program Folder
Ready to Install the Program
InstallShield Wizard Complete
Samsung Digital Camera Installer
Exit

Fig. 2-3

❸ After restarting the computer, connect the PC to the camera with the USB cable.

❹ Turn the camera power on. The [Found New Hardware Wizard] will open and the computer will recognise the camera.

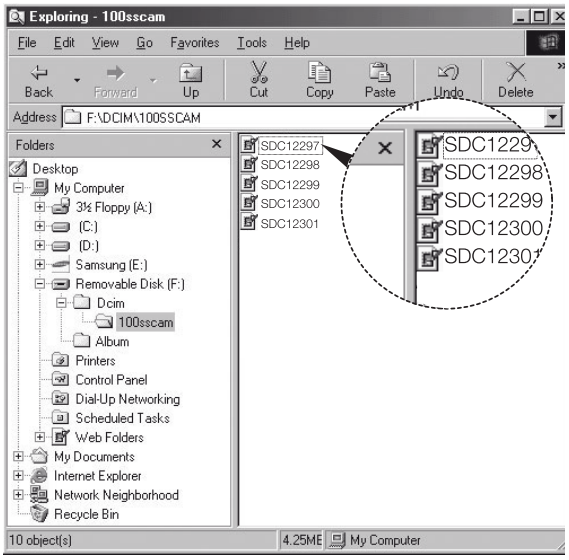


Fig. 2-4

※ If your OS is Windows XP/ Vista, an image viewer program will open.

■ PDF documents of user manual are included in the Software CD-ROM supplied with this camera. Search the PDF files with Windows explorer. Before opening the PDF files, you must install the Adobe Reader included in the Software CD-ROM. Install Adobe Reader from the CD provided. If the Internet is not enabled, install Adobe Reader by using the executable file located in the CD.

■ To install the Adobe Reader 6.0.1 correctly, Internet Explorer 5.01 or later has to be installed. Visit “www.microsoft.com” and upgrade the Internet Explorer.

2-2 FAQ

■ Please check the following if the USB connection malfunctions.

Case 1

Q USB cable is not connected or it is not the supplied USB cable.

A **Connect the supplied USB cable.**

Case 2

Q The camera is not recognised by your PC. Sometimes, the camera may appear under [Unknown Devices] in Device Manager.

A **Turn off the camera, remove the USB cable, plug in the USB cable again, and then turn on the camera.**

Case 3

Q There is an unexpected error during file transfer.

A **Turn the camera power off and on again. Transfer the file again.**

Case 4

Q When using the USB hub.

A **There may be a problem in connecting the camera to the PC through the USB hub if the PC and the hub are not compatible. Wherever possible, connect the camera to the PC directly.**

Case 5

Q Are other USB cables connected to the PC?

A **The camera may malfunction when it is connected to the PC at the same time as another USB cable. In this case, disconnect the other USB cable, and connect only one USB cable to the camera.**

Case 6

Q When I open the Device Manager (by clicking Start -> (Settings) -> Control Panel -> (Performance and Maintenance) -> System -> (Hardware) -> Device Manager), there are Unknown Devices or Other Devices entries with a yellow question mark(?) beside them or devices with an exclamation mark(!) beside them.

A **Right-click on the entry with the question (?) or exclamation (!) mark and select “Remove”. Restart the PC and connect the camera again.**

Case 7

Q In some security programs (Norton Anti Virus, V3, etc.), the computer may not recognise the camera as a removable disk.

A **Stop the security programs and connect the camera to the computer. Refer to the security program instructions about how to temporarily disable the program.**

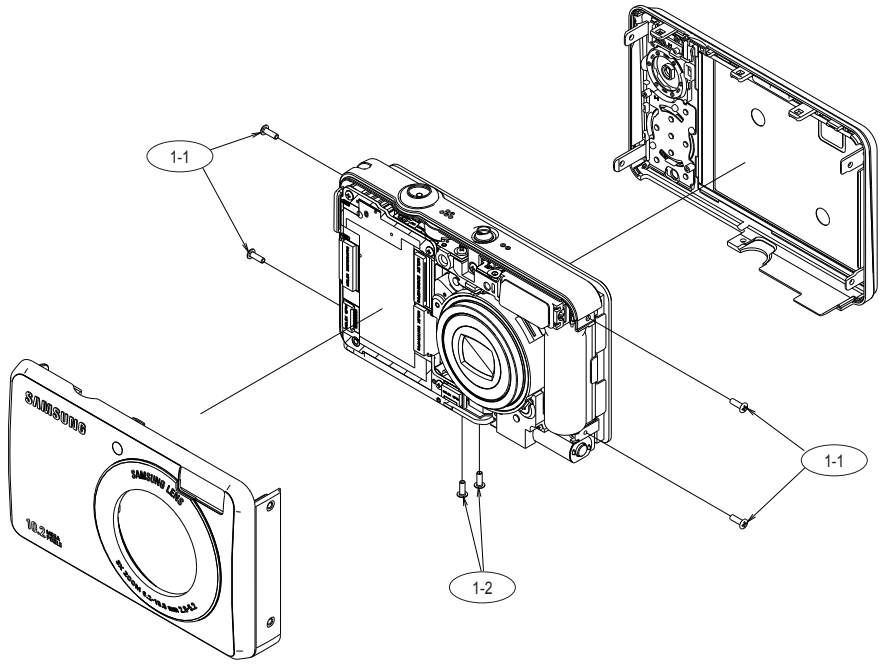
Case 8

Q The camera is connected to the USB port located on the front of the computer.

A **When the camera is connected to the USB port located on the front of the computer, the computer may not recognise the camera. Connect the camera to the USB port located on the back of the computer.**

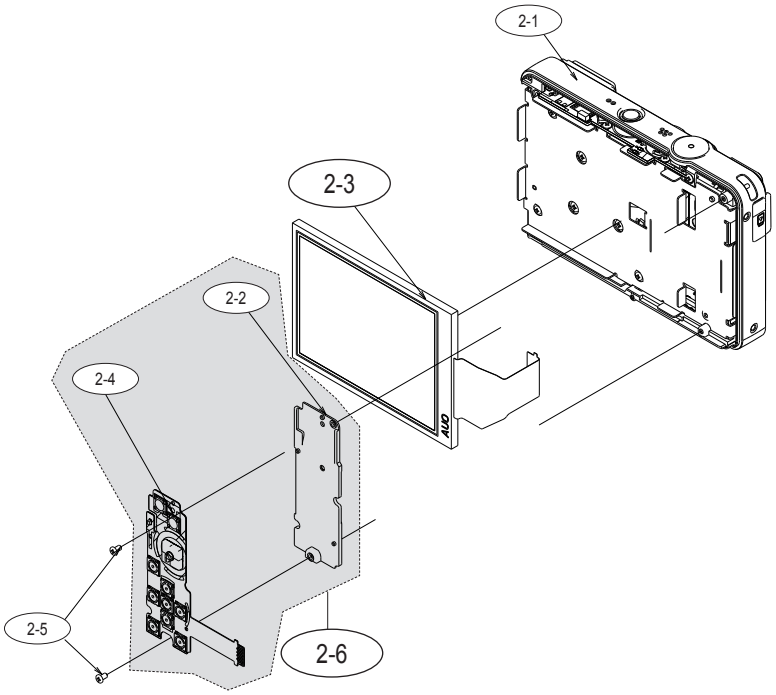
3. Exploded View and Parts List

3-1 Body Assembly



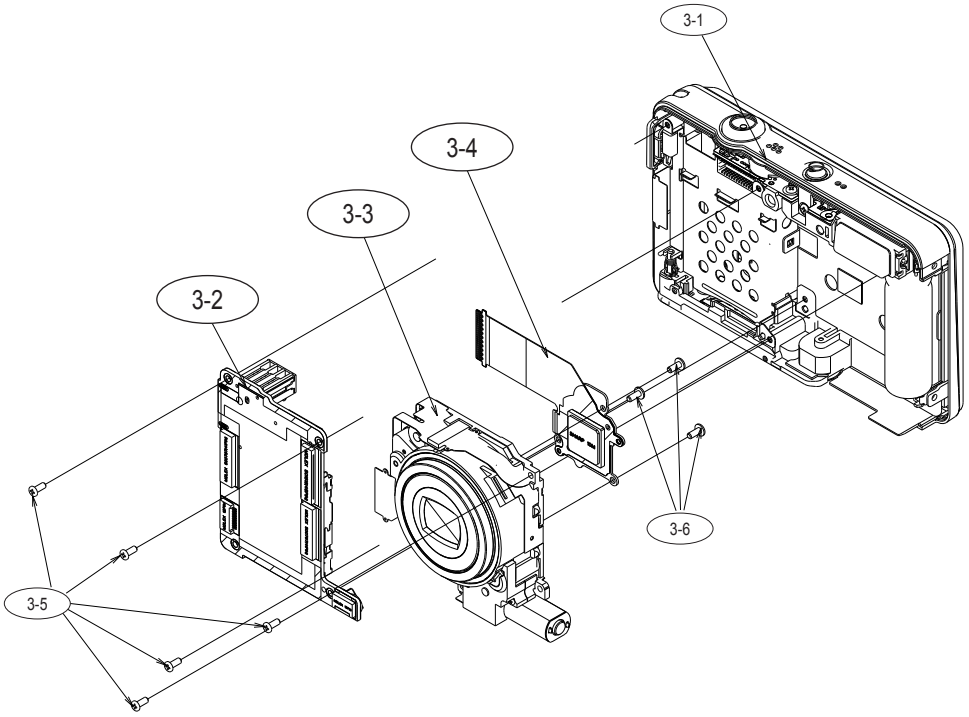
Loc. No	Parts No.	Description	Q ty	Available	Remark
1-1	6001-002264	SCREW (MACHINE)1.4X4.5 P0.30 Φ2.8	4	X	
1-2	6003-001739	SCREW (TAP TITE)1.4X4.0 P0.45 Φ2.8	2	X	

3-2 MAIN Assembly-1



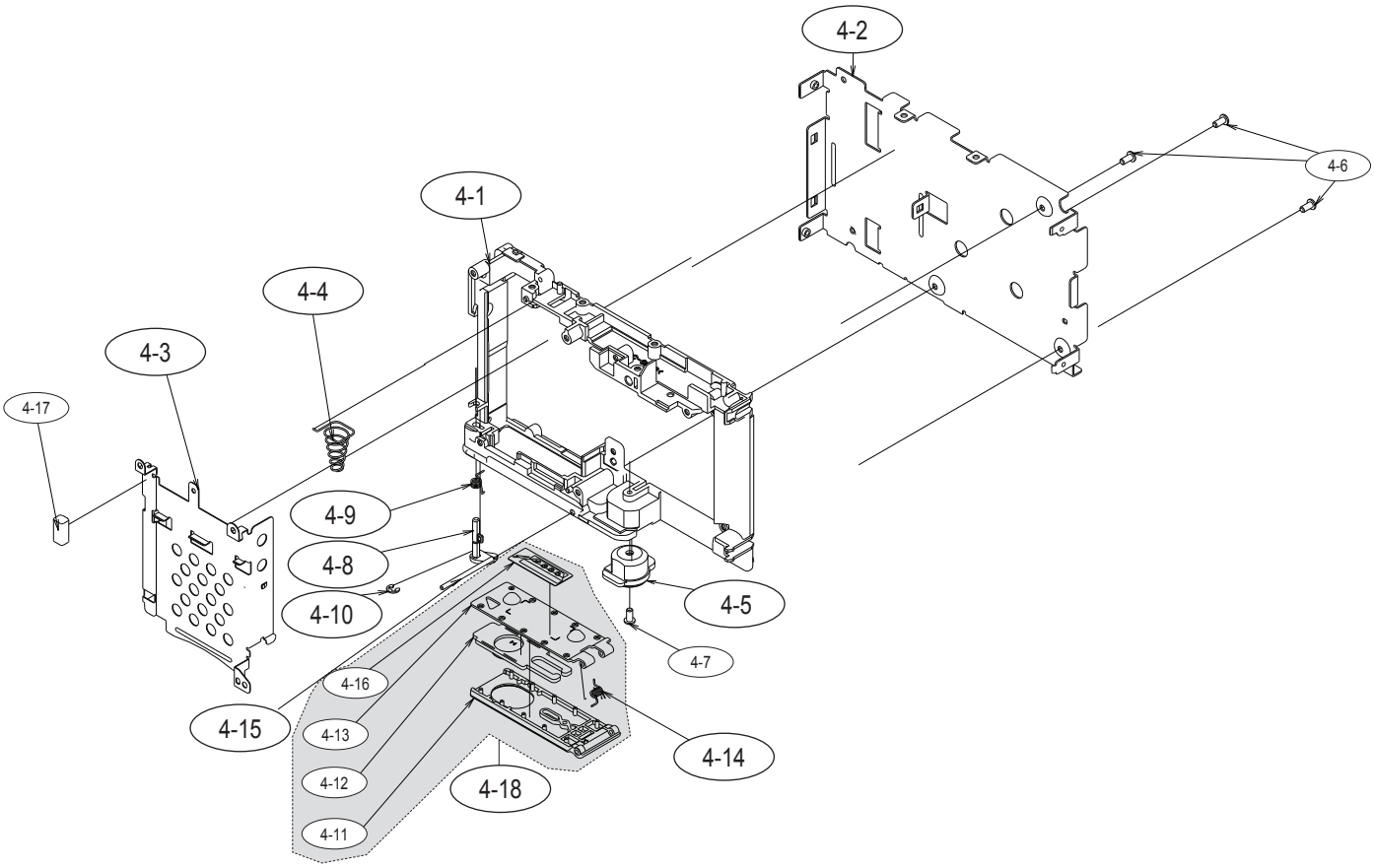
Loc. No	Parts No.	Description	Q ty	Available	Remark
2-1	AD97-17078A	MAIN ASSY-SUB_SL	1	X	
2-2	AD61-04008A	HOLDER-KEY FPCB	1	X	
2-3	AD07-00105A	LCD	1	O	
2-4	AD92-00730A	SMD FPCB ASSY-KE	1	X	
2-5	6003-001633	SCREW (TAP TITE)1.4X3.0 P0.45 Φ2.5	2	X	
2-6	AD92-00731A	FPCB ASSY-KEY	1	O	

3-3 MAIN Assembly-2



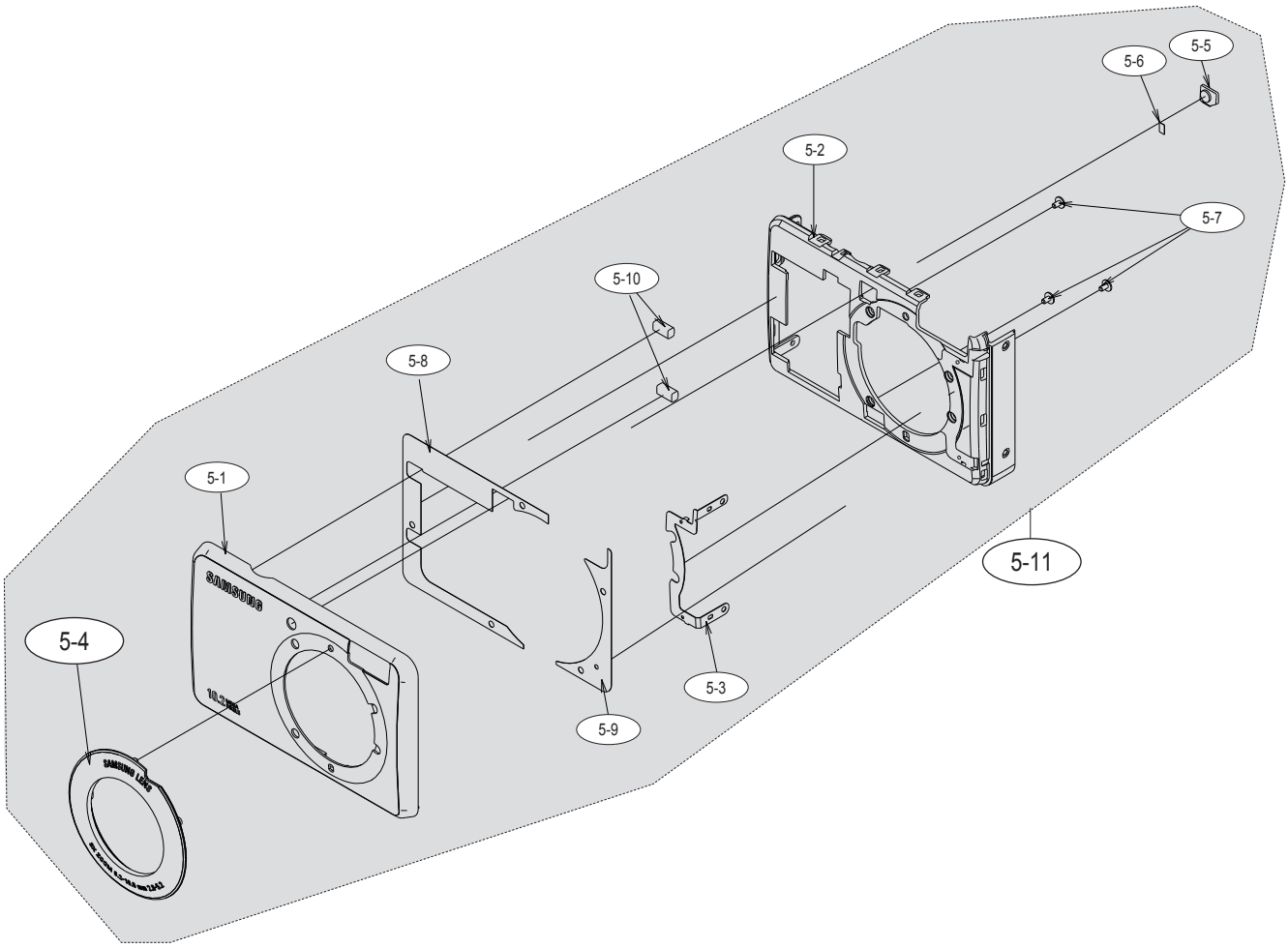
Loc. No	Parts No.	Description	Q ty	Available	Remark
3-1	AD97-17078A	MAIN ASSY-SUB_SL	1	X	
3-2	AD92-00729A	MAIN_PCB_ASSY	1	O	
3-3	AD97-16767A	BARREL ASSY	1	O	
3-4	AD92-00733A	CCD FPCB ASSY	1	O	
3-5	6003-001630	SCREW (TAP TITE)1.4X3.5 P0.45 Φ2.5	5	X	
3-6	6003-001633	SCREW (TAP TITE)1.4X3.0 P0.45 Φ2.5	3	X	

3-4 Chamber Assembly



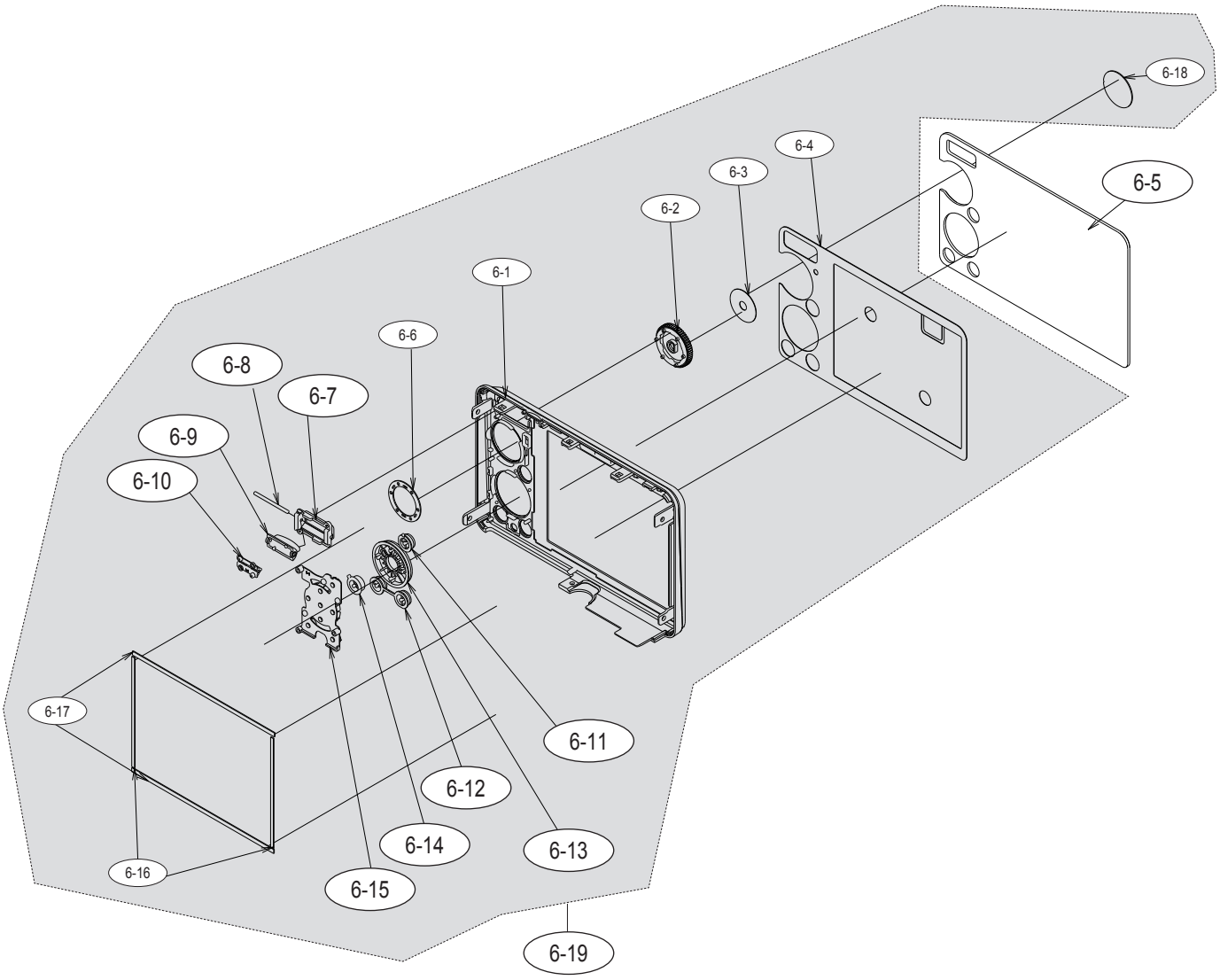
Loc. No	Parts No.	Description	Q ty	Available	Remark
4-1	AD62-00103A	CHAMBER BODY	1	O	
4-2	AD61-03987A	FRAME-MAIN	1	O	
4-3	AD61-03988A	PLATE-BATTERY HOLDER	1	O	
4-4	6107-001556	SPRING-CS (BATTERY PUSH)	1	O	
4-5	AD61-03494A	HOLDER-TRIPOD	1	O	
4-6	6003-001633	SCREW (TAP TITE)1.4X3.0 P0.45 Φ2.5	3	X	
4-7	6003-001633	SCREW (TAP TITE)1.4X3.0 P0.45 Φ2.5	1	X	
4-8	AD66-00664A	LEVER-BATTERY LOCK	1	O	
4-9	6107-001694	SPRING-TS (LOCK LEVER)	1	O	
4-10	6044-001137	E-RING	1	O	
4-11	AD63-03716A	COVER BATTERY-SL	1	X	
4-12	AD63-03717A	COVER BATTERY-LOCK_SL	1	X	
4-13	AD61-03989A	PLATE-BATTERY COVER	1	X	
4-14	6107-001433	SPRING-TS (BATTERY COVER)	1	O	
4-15	AD61-03569A	HINGE-BATTERY COVER	1	O	
4-16	AD68-02638A	LABEL BATTERY	1	X	
4-17	AD63-02507A	CARD SHIELD FOAM	1	X	
4-18	AD97-16894A	COVER ASSY_BATTERY	1	O	SILVER
	AD97-16895A	COVER ASSY_BATTERY	1	O	BLACK
	AD97-16896A	COVER ASSY_BATTERY	1	O	PINK
	AD97-16897A	COVER ASSY_BATTERY	1	O	GRAY
	AD97-17174A	COVER ASSY_BATTERY	1	O	BLUE
	AD97-17300A	COVER ASSY_BATTERY	1	O	RED

3-5 Front Cover Assembly



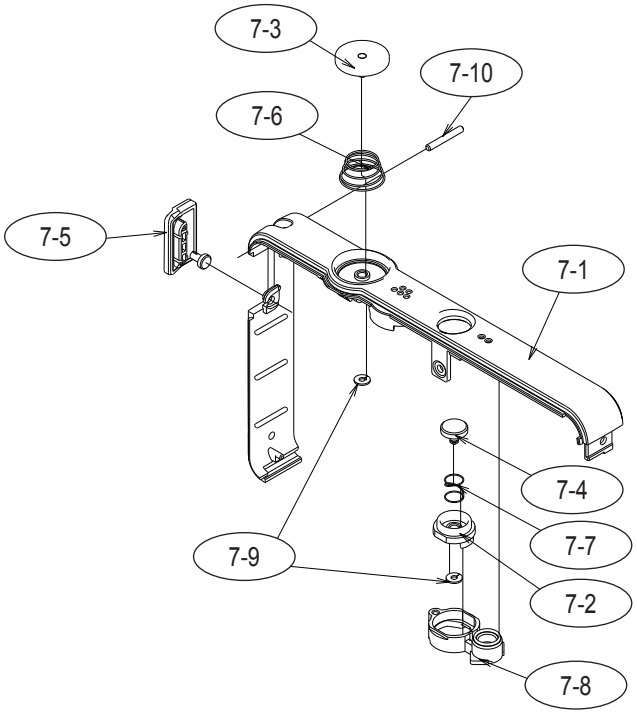
Loc. No	Parts No.	Description	Q ty	Available	Remark
5-1	AD63-03734A	COVER FRONT-SL	1	X	
5-2	AD63-03714A	COVER FRONT-INNER	1	X	
5-3	AD61-03991A	PLATE-COVER FRONT R	1	X	
5-4	AD64-02539A	DECORATION-FRONT	1	O	
5-5	AD64-02537A	WINDOW LED-AF	1	X	
5-6	AD63-03745A	T/SHEET-AF LED WINDOW	1	X	
5-7	6003-001733	SCREW (TAP TITE) 1.4X2.5 P0.45 Φ3.5	3	X	
5-8	AD63-03739A	T/SHEET-COVER 1	1	X	
5-9	AD63-03740A	T/SHEET-COVER 2	1	X	
5-10	AD63-02056A	COVER GASKET	2	X	
5-11	AD97-16811A	F/C ASSY_SAMSUNG	1	O	SILVER
	AD97-16812A	F/C ASSY_SAMSUNG	1	O	BLACK
	AD97-16813A	F/C ASSY_SAMSUNG	1	O	PINK
	AD97-16814A	F/C ASSY_SAMSUNG	1	O	GRAY
	AD97-17173A	F/C ASSY_SAMSUNG	1	O	BLUE
	AD97-17301A	F/C ASSY_SAMSUNG	1	O	RED

3-6 Back Cover Assembly



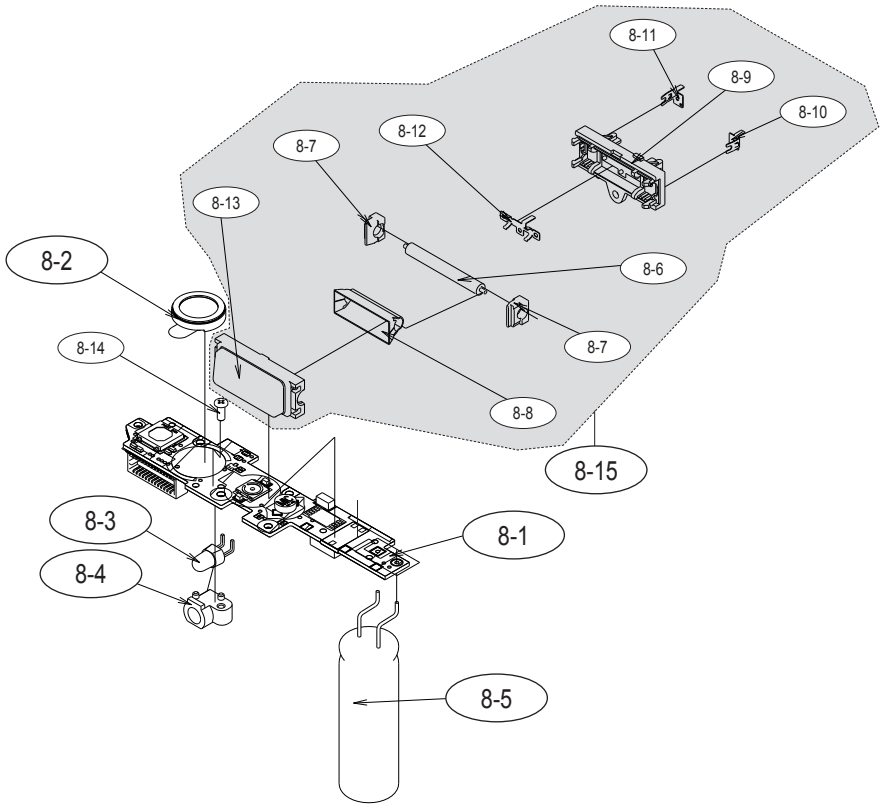
Loc. No	Parts No.	Description	Q ty	Available	Remark
6-1	AD63-03712A	COVER BACK-SL	1	X	
6-2	AD64-02540A	KNOB MODE DIAL	1	X	
6-3	AD63-03744A	T/SHEET-MODE DIAL	1	X	
6-4	AD63-03738A	T/SHEET-LCD WINDOW	1	X	
6-5	AD64-02538B	WINDOW-LCD	1	O	
6-6	AD61-03990A	PLATE-MODE DIAL	1	X	
6-7	AD61-03986A	HOLDER-ZOOM BUTTON	1	O	
6-8	AD61-04039A	HINGE-ZOOM BUTTON	1	O	
6-9	AD64-02529A	BUTTON ZOOM	1	O	
6-10	AD73-00321A	RUBBER-ZOOM	1	O	
6-11	AD64-02533A	BUTTON FUNCTION-1	1	O	
6-12	AD64-02534A	BUTTON FUNCTION-2	1	O	
6-13	AD64-02535A	BUTTON NAVI	1	O	
6-14	AD64-02532A	BUTTON OK	1	O	
6-15	AD73-00319A	RUBBER-BACK BUTTON	1	O	
6-16	AD63-03747A	CUSHION-LCD 2	2	X	
6-17	AD63-03746A	CUSHION-LCD 1	2	X	
6-18	AD67-01113A	CAP-MODE DIAL	1	X	
6-19	AD97-16803A	BACK COVER ASSY	1	O	SILVER
	AD97-16804A	BACK COVER ASSY	1	O	BLACK
	AD97-16805A	BACK COVER ASSY	1	O	PINK
	AD97-16806A	BACK COVER ASSY	1	O	GRAY
	AD97-17172A	BACK COVER ASSY	1	O	BLUE
	AD97-17302A	BACK COVER ASSY	1	O	RED

3-7 Middle Cover Assembly



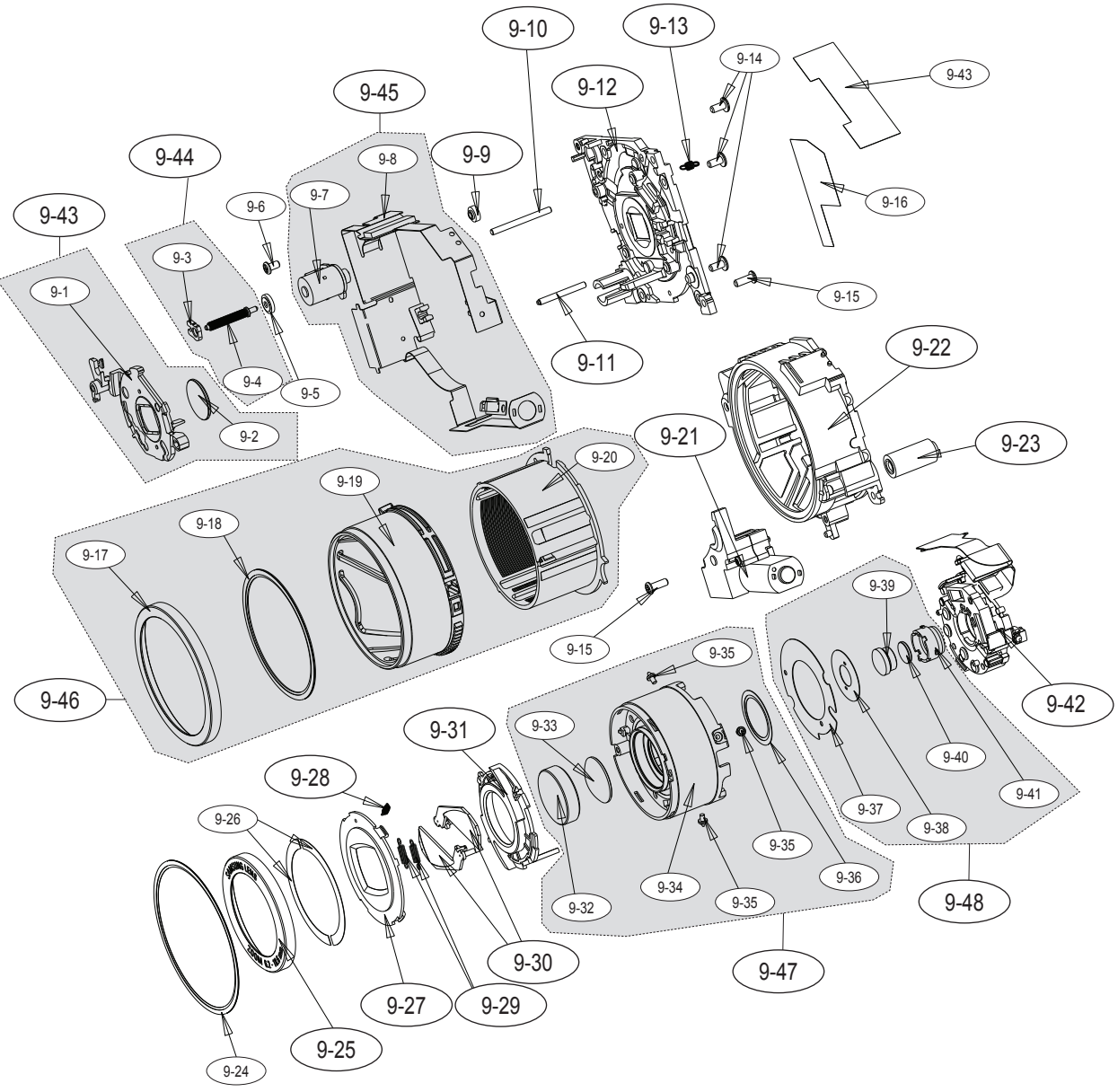
Loc. No	Parts No.	Description	Q ty	Available	Remark
7-1	AD63-03713A	COVER MIDDLE-TOP_SAMSUNG PL50	1	O	
	AD63-04062A	COVER MIDDLE -TOP_VLUU P50	1	O	
	AD63-04063A	COVER MIDDLE -TOP_SAMSUNG SL201	1	O	
7-2	AD64-02536A	WINDOW LED-POWER	1	O	
7-3	AD64-02530A	BUTTON RELEASE	1	O	
7-4	AD64-02531A	BUTTON POWER	1	O	
7-5	AD63-03715A	COVER-CONNECTOR	1	O	
7-6	6107-001555	SPRING-CS (RELEASE)	1	O	
7-7	6107-001439	SPRING-CS (POWER)	1	O	
7-8	AD73-00320A	RUBBER-POWER LED	1	O	
7-9	6031-001628	WASHER	2	O	
7-10	AD61-04054A	HINGE-STRAP	1	O	

3-8 Top PCB Assembly



Loc. No	Parts No.	Description	Q ty	Available	Remark
8-1	AD92-00732A	TOP_PCB_SMD ASSY	1	O	
8-2	3001-002492	SPEAKER	1	O	
8-3	0601-002515	AF LED	1	O	
8-4	AD61-03778A	HOLDER-AF LED	1	O	
8-5	2401-004450	MAIN CONDENSOR	1	O	
8-6	AD47-00018A	XE TUBE	1	X	
8-7	AD73-00257A	RUBBER-XE TUBE	2	X	
8-8	AD67-00642A	REFLECTOR	1	X	
8-9	AD61-03985A	HOLDER-REFLECTOR	1	X	
8-10	AD67-01108A	CONTACT-XE TUBE 2	1	X	
8-11	AD67-01107A	CONTACT-XE TUBE 1	1	X	
8-12	AD67-01109A	CONTACT-TRIG	1	X	
8-13	AD67-01106A	LENS-FRESNEL	1	X	
8-14	6003-001633	SCREW (TAP TITE)1.4X3.0 P0.45 Φ2.5	1	X	
8-15	AD97-16820A	ASSY-FLASH MODULE			

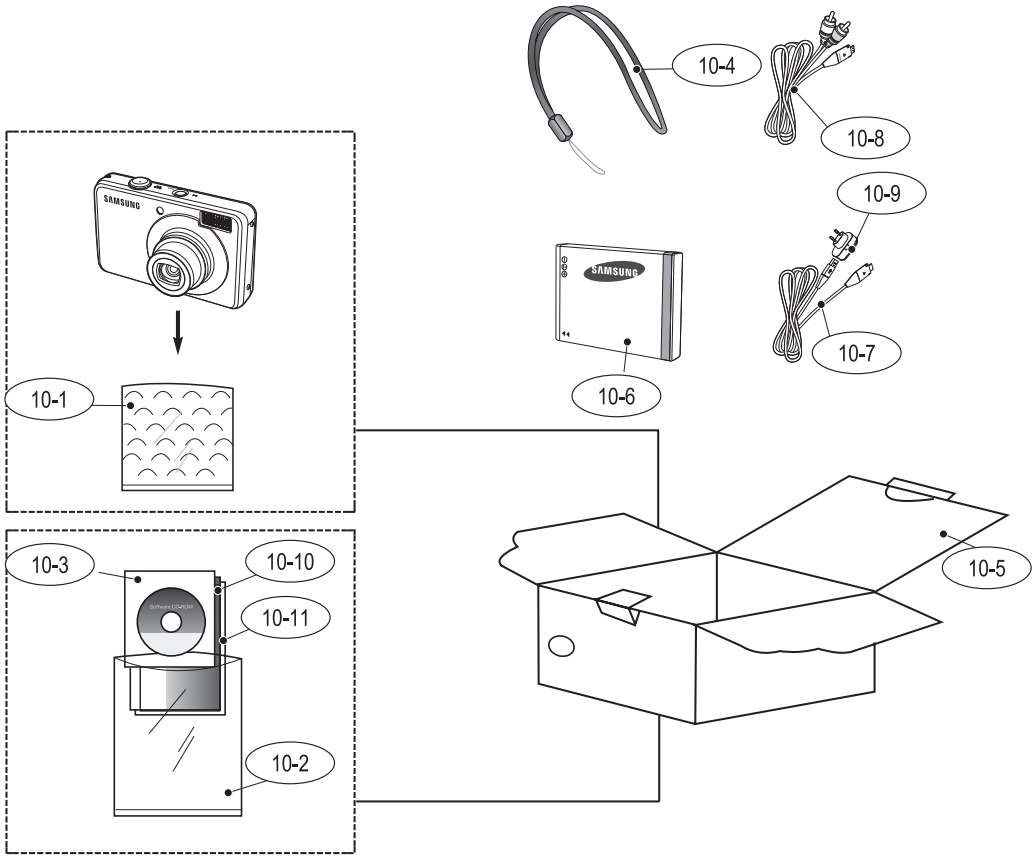
3-9 Barrel Assembly



Loc. No	Parts No.	Description	Q ty	Available	Remark
9-1	AD67-00743A	3RD LENS BARREL	1	X	
9-2	AD67-00770A	G6 LENS	1	X	
9-3	AD61-03445A	AF CLIP	1	X	
9-4	6003-001682	AF LEAD SCREW	1	X	
9-5	AD66-00517A	AF GEAR B	1	X	
9-6	6003-001629	SCREW(1.4*2.5)	1	X	
9-7	3101-001449	AF MOTOR ASSY	1	X	
9-8	AD97-15157A	MAIN FPCB SMD ASSY	1	X	
9-9	AD66-00516A	AF GEAR A	1	O	
9-10	AD66-00570A	AF GUIDE BAR A	1	O	
9-11	AD66-00571A	AF GUIDE BAR B	1	O	
9-12	AD61-03813C	LENS BASE	1	O	
9-13	6107-001477	SPRING-ES	1	O	
9-14	6003-001630	SCREW(1.4*3.5)	3	X	
9-15	6003-001717	SCREW1445	2	X	
9-16	AD81-08512A	FPCB TAPE A	1	X	
9-17	AD64-01788A	CAM DECORING	1	X	
9-18	AD63-02418A	CAM SHIELD	1	X	
9-19	AD67-00745B	BARREL-CAM	1	X	
9-20	AD67-00740A	BARREL-GUIDE	1	X	
9-21	AD31-00069A	ZOOM MODULE ASSY	1	O	
9-22	AD67-00738B	BARRREL-OUTER GUID	1	O	
9-23	AD66-00518A	IDLE GEAR	1	O	
9-24	AD63-02419A	OGB SHIELD	1	X	
9-25	AD64-01791A	FRONT DECORING	1	O	
9-26	AD63-02446A	FRONT DECORING TAPE	2	X	
9-27	AD64-01843A	PANEL FRONT-BARREL	1	O	
9-28	6107-001484	BARRIER OPEN SPRING	1	O	
9-29	6107-001476	BARRIE SPRING	2	O	
9-30	AD63-01529A	BARRIER A	2	O	
9-31	AD66-00515A	LEVER-BARRIER	1	O	
9-32	AD67-00602A	LENS-ASP LENS-GLASS	1	X	
9-33	AD67-00768A	G2 LENS	1	X	
9-34	AD67-00744A	BARREL-1ST(ZOOM RING)	1	X	

Loc. No	Parts No.	Description	Q ty	Available	Remark
9-35	AD66-00569A	SHAFT-MOVE	3	X	
9-36	AD63-01299A	SHEET-G2	1	X	
9-37	AD61-03267A	SHUTTER COVER PLATE	1	X	
9-38	AD63-01300A	G3 SHEET	1	X	
9-39	AD97-13648A	G3/G4 LENS ASS'Y	1	X	
9-40	AD67-00524A	G4 LENS	1	X	
9-41	AD67-00742A	2ND LENS BARREL	1	X	
9-42	AD97-16090A	SHUTTER ASSY	1	O	
9-43	AD97-13679A	LENS ASSY-3RD	1	O	
9-44	AD97-15161A	ASSY ETC-AF LEAD	1	O	
9-45	AD97-15159A	ASSY ETC-MAINFPCB	1	O	
9-46	AD97-13684A	SUB BARREL ASSY-CAM	1	O	
9-47	AD97-15129A	SUB BARREL ASSY-ZOOM	1	O	
9-48	AD97-16365A	SUB BARREL ASSY-2ND_VE	1	O	

3-10 Packing Item



Loc. No	Parts No.	Description	Q ty	Available	Remark
10-1	6902-000924	PE BAG (FOR CAMERA)	1	O	
10-2	6902-000921	PE BAG (FOR ACCESSORY)	1	O	
10-3	AD46-00226A	SAMSUNG_CD_PL50	1	O	
	AD46-00227A	SAMSUNG_CDSL202	1	O	
10-4	AD63-02596A	STRAP_KENOX_S730_SILVER	1	O	
	AD63-02604A	STRAP_KENOX_S860_BLACK	1	O	
10-5	AD69-01950A	GT_VLUU_ PL50	1	O	
	AD69-01952A	GT_PL50_EXP_BIG	1	O	
	AD69-01954A	GT_PL50_EXP_SMALL	1	O	
	AD69-01956A	GT_SL102_USA_MIC	1	O	
	AD69-01957A	GT_PL50_CAN_MIC	1	O	
	AD69-01951A	GT_PL50_CHI	1	O	

Loc. No	Parts No.	Description	Q ty	Available	Remark
10-6	4302-001221	LITHIUM-ION_SLB-10A	1	O	
10-7	AD39-00161A	20PIN_USB_Cable_SUC-C7	1	O	
10-8	AD39-00146A	20PIN_AV_CABLE_SCC-AV20	1	O	
10-9	AD44-00133A	AC_ADAPTOR_4.2V (SAC-47)_EXP	1	O	
	AD44-00131A	AC_ADAPTOR_4.2V (SAC-47)_USA	1	O	
	AD44-00130A	AC_ADAPTOR_4.2V (SAC-47)_UK	1	O	
	AD44-00135A	AC_ADAPTOR_4.2V (SAC-47)_AUS	1	O	
	AD44-00134A	AC_ADAPTOR_4.2V (SAC-47)_CHI_TSOE	1	O	
	AD44-00132A	AC_ADAPTOR_4.2V (SAC-47)_ARG	1	O	
10-10	AD68-03523A	U_VLUU_ USER_MANUAL_PL50	1	O	
	AD68-03525A	U_PL50_EUR1	1	O	
	AD68-03526A	U_PL50_EUR2	1	O	
	AD68-03527A	U_PL50_ASIA	1	O	
	AD68-03528A	U_PL50_AMERICA	1	O	
	AD68-03529A	U_SL202_AMERICA_USA	1	O	
	AD68-03530A	U_PL50_EUR3	1	O	
	AD68-03524A	U_SAMSUNG PL50_CHI	1	O	
10-11	6801-001646	WARRANTY CARD_EXP	1	O	
	6801-001737	WARRANTY CARD_2 YERARS	1	O	
	6801-001734	WARRANTY_CARD_UKRAINE	1	O	
	6801-001735	WARRANTY CARD_RUS(3 YEARS)	1	O	
	6801-001755	WARRANTY_BALTIC_2 YERARS	1	O	
	AD68-02558A	PRC_CARD_RUSSIA	1	O	
	6801-001647	CARD_PRODUCT(Mexico)	1	O	
	6801-001722	WARRANTY CARD_IRAN	1	O	
	6801-001659	WARRANTY CARD_TURKEY	1	O	
	6801-001660	SERVICE_CENTER_TURKEY	1	O	
	6801-001662	WARRANTY_CARD_Argentina	1	O	
	6801-001664	LOCAL_WARRANTY_CARD_INDIA	1	O	
	6801-001665	LOCAL_WARRANTY CARD_ITALIA	1	O	
	6801-001681	WARRANTY CARD_CANADA	1	O	
	6801-001564	WARRANTY_CARD_Vietnam	1	O	
	6801-001736	WARRANTY_CARD_TAIWAN	1	O	
	6801-001740	WARRANTY_CARD_SEDA	1	O	

4. Firmware update

4-1 Product reset

▪ This describes how to reset the camera to factory default setting.

1. First turn on the power of the camera.

Fig. 4-1

2. Press the ❶ WIDE button + DOWN button and then turn the ❷ POWER off.

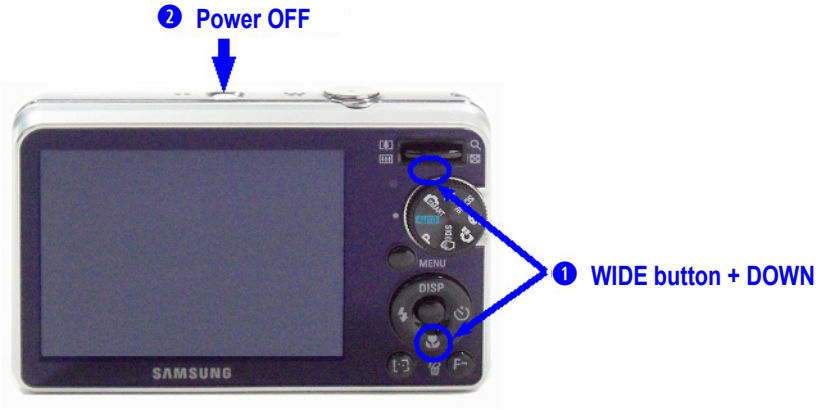


Fig. 4-2

3. Turn the power of the camera on again to check whether it has been reset.

Fig. 4-3

4-2 Version check

▪ This describes how to check the version of the current firmware of the camera.

1. Use fully charged batteries for power.

2. First turn off the power of the camera.

3. Press the ❶ SHUTTER button + DOWN button, and then turn the ❷ POWER on.

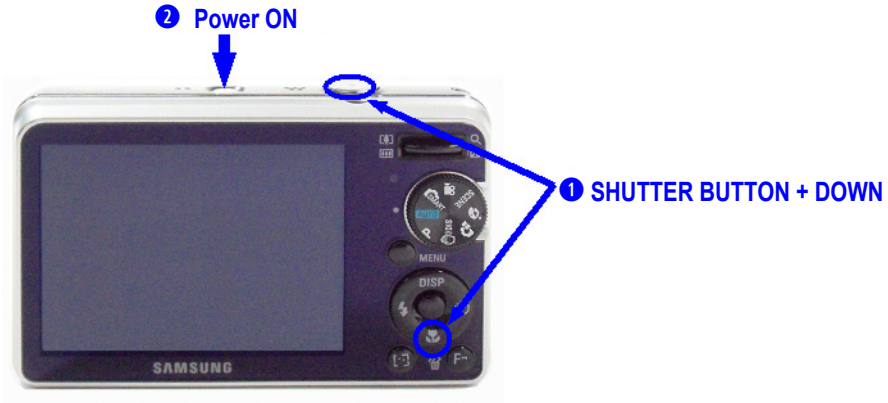


Fig. 4-4

4. Check the version of the firmware and then turn the power off.

Fig. 4-5

4-3 Upgrade

♦ **How to execute the firmware**

The firmware is configured in the following structure.

Code area is where the execution codes to operate the camera are located, and the Partition [1:3] area is where the various resources necessary to operate the camera are saved. Among these areas, Partition 3 area is where the Defective Pixel adjustment data and Lens Shading adjustment data are saved.

User Area is where the setting values are saved through the menu when the user uses the camera, and the adjusted data through integrated process is saved.

<Table 4-1>

code	partition1	partition2	partition3	User Area

► **Reference of general version:**

- As the version to update the Code + Partition [1:2] area, this protects both the adjusted data saved in the User Area and the Partition 3 area.

1. Insert the SD card containing the firmware data file and Upgrade Script file into the camera.

* You need two files to upgrade the FW and the required files are FW data file and Upgrade Script file.
* Because all data saved on the FLASH memory will be reset when you upgrade the firmware, back up your data before proceeding with the upgrade.

2. Use the AC adaptor or fully charged batteries for the power.

* You can proceed with the upgrade only when the battery level is full (Icon showing full up to 3rd level).

3. Turn on the power of the camera.

Fig. 4-6

4. The version of the FW to upgrade will be displayed on the LCD screen. When you press the SHUTTER button, the FW upgrade will start.

Fig. 4-7

5. The progress of the FIRMWARE upgrade will be displayed on the LCD and the upgrade will proceed.

Fig. 4-8

6. When the upgrade is completed, the camera will automatically be turned off.

4-4 Full upgrade

♦ **How to execute the FULL firmware**

The firmware is configured in the following structure.

Code area is where the execution codes to operate the camera are located, and the Partition [1:3] area is where the various resources neces sary to operate the camera are saved. Among these areas, Partition 3 area is where the Defective Pixel adjustment data and Lens Shading adjustment data are saved.

User Area is where the setting values are saved through the menu when the user uses the camera, and the adjusted data through integrated process is saved.

<Table 4-2>

code	partition1	partition2	partition3	User Area

► **Reference of FULL version:**

- As the version to update the Code + Partition [1:3] area, this protects the adjusted data saved in the User Area but resets the Defective Pixel adjustment data and Lens Shading adjustment data. Therefore, you must recover the to previously adjusted data by readjusting or by backing up the adjusted data.

- When executing a FULL version upgrade, the adjusted data will automatically be saved to the SD card and you can upload the adjusted data back to the camera by referring to the following detail method.

- Adjusted data automatically saved to the SD card is composed of 3 files; LSCLUTO.BIN, DefectivePixel0.bin and DefectivePixel1.bin.

1. Insert the SD card containing the FULL FW data file and Upgrade Script file into the camera.

* You need two files for FULL FW upgrade and the required files are FULL FW data file and Upgrade Script file.
* Because all data saved on the FLASH memory will be reset when you upgrade the firmware, back up your data before proceeding with the upgrade.

2. Use the AC adaptor or fully charged batteries for the power.

- You can proceed with the upgrade only when the battery level is full (Icon showing full up to 3rd level).

3. Turn on the power of the camera.

Fig. 4-9

4. The version of the FULL FW to upgrade will be displayed on the LCD screen.

Fig. 4-10

5. When you press the SHUTTER button, the FULL FW upgrade will automatically start.

1) First the adjusted data will automatically be backed up in the SD card before the FULL FW upgrade.

Fig. 4-11

2) Then, the FULL FW upgrade will start. (Green LED will flash)

Fig. 4-12

3) When the FULL FW upgrade is complete, the camera will automatically be turned off.

6. To restore the adjusted data that has been backed up, turn on the power of the camera again and then press the shutter button (S1).
7. When the adjusted data is restored on the camera, the camera will be in standby condition ready to turn off t he power. (Turn OFF the power of the camera.)

*** If the adjusted data is not restored by the above method, refer to the following method.**

4) Delete all files except for the 3 files
(LSCLUT1.BIN, DefectivePixel0.bin and DefectivePixel1.bin) for adjusted data backed in the SD card.

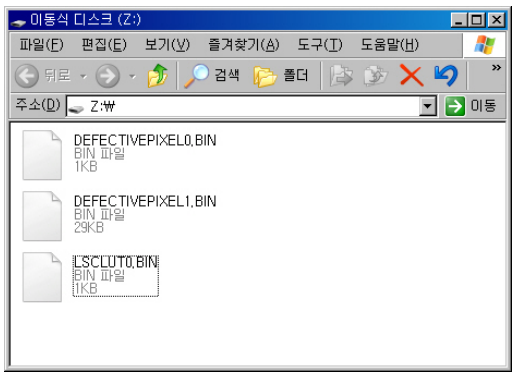


Fig. 4-13

1) Insert the SD card containing the adjusted data.

2) Press the ❶ SHUTTER button + DOWN button and then turn the ❷ power on.

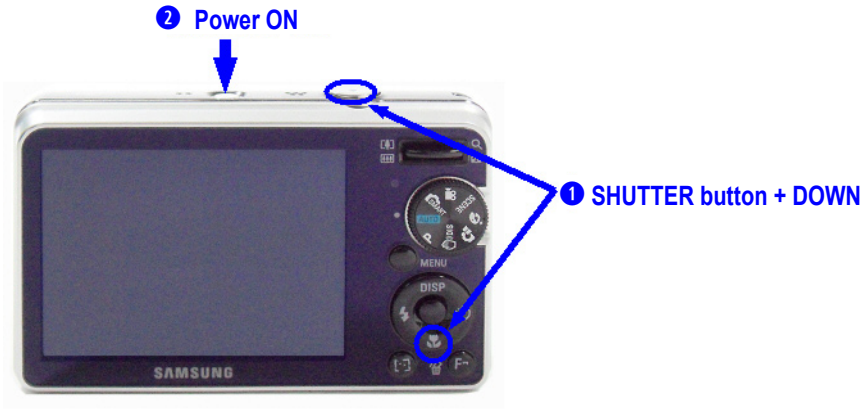


Fig. 4-14

3) The following screen will be displayed and the process for adjusted data will be completed.

Fig. 4-15

4) Turn OFF the power of the camera.

8. Check whether the adjusted data is restored in the screen where you check the version of the firmware. (D0, D1, L0 item – OK)

Fig. 4-15

5. Adjustment

5-1 Basic guide for adjustment

■ **After you replace the electronic parts, you must make adjustments for each adjustment item in PL50.**
■ The following table shows the necessary adjustment item for replacing each part.

1. After replacing the electronic part, you must make adjustments for each item by referring to the following table.

<Table 5-1>

	MAIN PCB	POWER PCB	BARREL ASSY	CCD ASSY
FIRMWARE UPGRADE	•		•	
PUNT ADJ	•		•	•
SHUTTER CLOSE TIME, OB, LENS SHADING	•		•	•
FLASH ADJ	•	•		
BATTERY LEVEL ADJ	•	•		
BURNING TEST & CCD DEFECT CELL	•	•	•	•
EEPROM READ				
EEPROM WRITE				

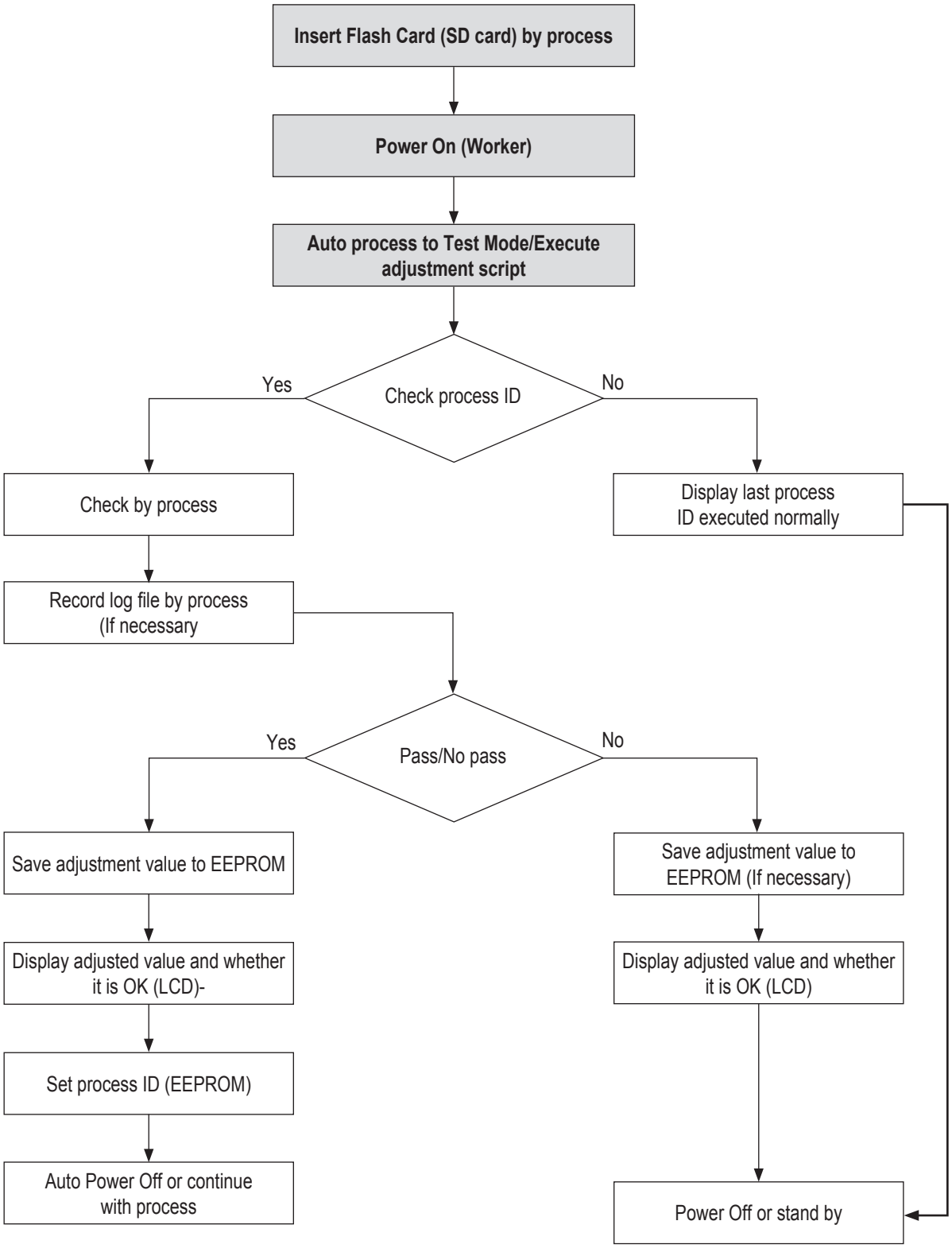
2. Adjustment equipment

- AE TESTER: AE TESTER that enables LV 12
- Infinity Callimator for PUNT adjustment
- Gray chart (18%) for FLASH & AWB, DARK BOX)
- POWER SUPPLY: 4.2V/2A

3. Adjustment program file

Save and use the program for each adjustment item on the SD card to adjust each item.
The file name for each adjustment item is the same as **"mondrian_103_adj.txt"**.

4. Operating procedure of adjustment program


Insert Flash Card (SD card) by process
Power On (Worker)
Auto process to Test Mode/Execute adjustment script
Check process ID
Yes
No
Check by process
Display last process ID executed normally
Record log file by process (If necessary
Pass/No pass
Yes
No
Save adjustment value to EEPROM
Save adjustment value to EEPROM (If necessary)
Display adjusted value and whether it is OK (LCD)-
Display adjusted value and whether it is OK (LCD)
Set process ID (EEPROM)
Auto Power Off or continue with process
Power Off or stand by

5-2 Lens Shading

■ Make adjustments to the Lens Shading to the surrounding brightness of each camera.
■ Because the surrounding brightness is lower compared to the center for each set, separately adjust each set so that the surrounding brightness is higher.

<Adjustment method>

1. Prepare the AE TESTER.
* Luminance specification of the Light box is **12LV**.
* The Light box is located at 10mm+-1mm with the body tube open.
* The color temperature specification of the Light box is **3300K**.

2. Save the applicable adjustment file to the SD card.

3. After inserting the SD card containing the program file to the camera, set the camera to the AE TESTER.

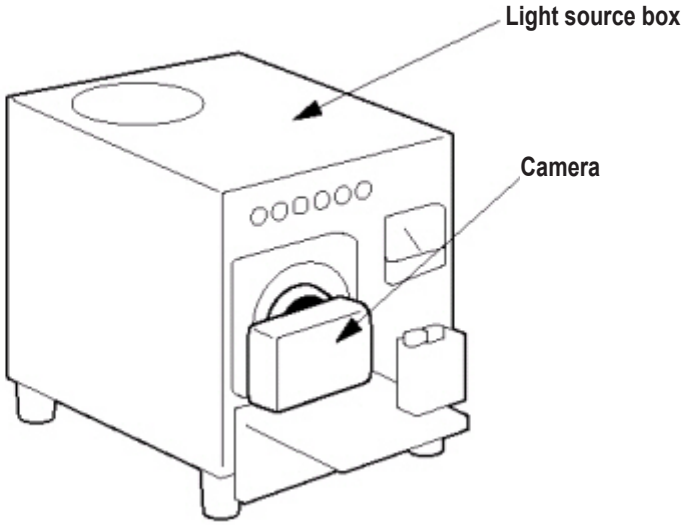


Fig. 5-1

4. Adjust the LV value of the AE METER to 12.

5. When you turn on the power of the camera, the adjustment will start automatically.
❶ Adjust the Lens Shading with large lense, Zoom 0 condition.
❷ Refer to the EEPROM WRITE information and write the adjustment result to EEPROM.
❸ Refer to the CARD WRITE INFORMATION to write the adjustment result to the data file.
❹ Set the lower and upper specification.

6. When the adjustment is completed, the camera will automatically be turned off.

<Adjustment result>
Open and check the CSV file generated from the adjustment memory card.

5-3 Shutter Close Time ADJ

■ Adjust the Close timing of the device shutter by camera.
■ Because there is a deviation of shutter closing time by each set, make adjustments by each set to reduce this deviation.
■ AWB LOW item and AWB LOW are adjusted simultaneously.

<Adjustment method>

1. Prepare the AE TESTER that can be adjusted to LV 12.

2. Install the camera to the AE TESTER.
   * Luminance specification of the Light box is **12LV**.
   * The color temperature specification of the Light box is **3300K**.

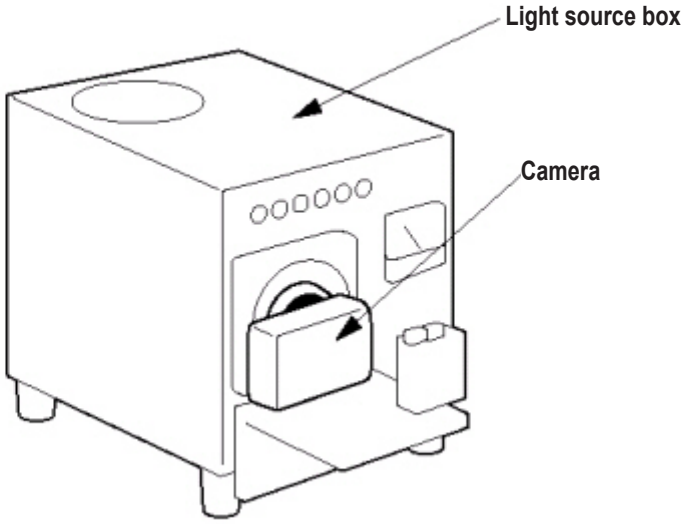


Fig. 5-2

3. After inserting the SD card containing the program file to the camera, turn on the power of the camera.

4. The adjustment process will automatically start.

❶ Refer to the specification (Illiminance) for testing.
-Line delay and Sub delay are adjusted so that the appropriate value can be identified to the specification illuminance.
❷ If the result line delay wis within the min and max range, it is OK. If it is outside of the range, process as NG.
❸ Refer to the EEPROM WRITE information and write the adjustment result to EEPROM.
❹ Refer to the CARD WRITE INFORMATION to write the adjustment result to the data file.

5. When the adjustment is completed, the camera will automatically be turned off.

<Adjustment result>
Open and check the CSV file generated from the adjustment memory card.

5-4 CCD Gain ADJ

■ Because there is a deviation of CCD saturation level by each CCD, make adjustments to the basic analog gain to reduce this deviation.

<Adjustment method>

1. Prepare the AE TESTER.
* Luminance specification of the Light box is **12LV**.
* The Light box is located at 10mm+-1mm with the body tube open.
* The color temperature specification of the Light box is **3300K**.

2. Save the applicable adjustment file to the SD card.

3. After inserting the SD card containing the program file to the camera, set the camera to the AE TESTER.

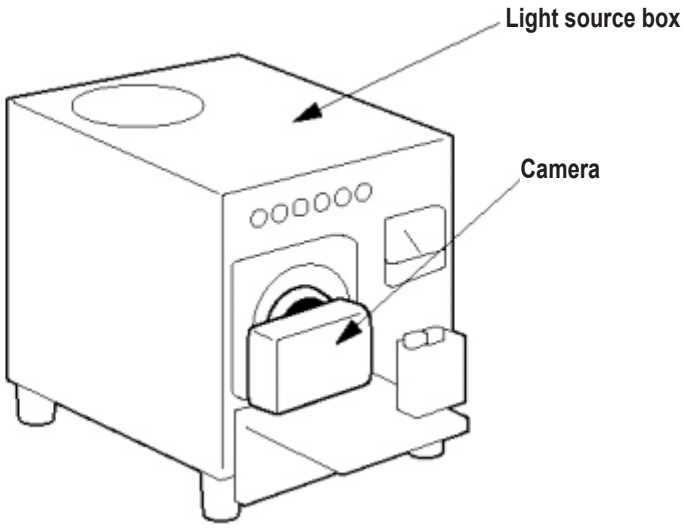


Fig. 5-3

4. Adjust the LV value of the AE METER to 12.

5. When you turn on the power of the camera, the adjustment will start automatically.
❶ Adjust the Gain.
❷ Refer to the EEPROM WRITE information and write the adjustment result to EEPROM.
❸ Refer to the CARD WRITE INFORMATION to write the adjustment result to the data file.
❹ Set the lower and upper specification.

6. When the adjustment is completed, the camera will automatically be turned off.

<Adjustment result>
Open and check the CSV file generated from the adjustment memory card.

5-5 Flash ADJ

■ Set a limit to the illuminance by the Strobe light to classify the hardware defect.
■ Classify the set that deviates from the spcification by illuminating 2 times and then calculate the flash R, B gain.

<Adjustment method>

1. Attach an 18% reflective paper in the dark room where the light is blocked.

2. Set up the camera in the dark room.

3. Set the distance between the reflective paper and camera to 50cm.

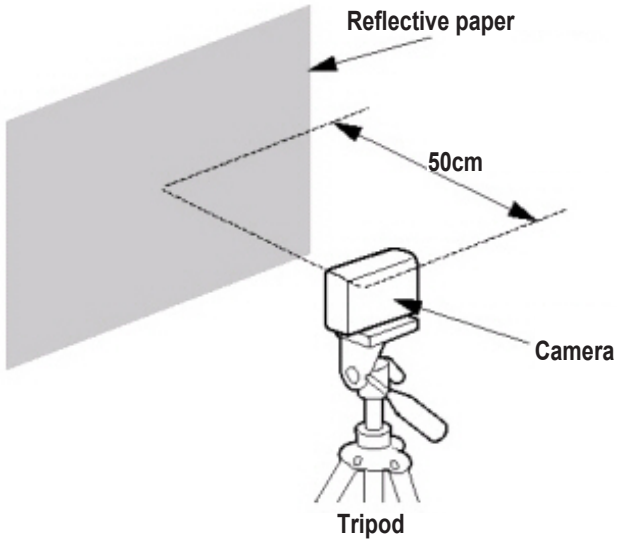


Fig. 5-4

4. Save the applicable adjustment file to the SD card.

5. After installing the SD card containing the program file, turn on the power of the camera.

6. The adjustment will automatically start.

❶ Compare the reference illumination for 2 illuminations using the flash algorithm, and make a judgment.
❷ By using the average value of the illuminance of 2 times, check the R and B gain to make Pass/No Pass judgment.
❸ Record the R and B gain to EEPROM during flash process and R, B gain success.

<Adjustment result>

Open and check the CSV file generated from the adjustment memory card.

5-6 Focus ADJ

■ **Adjustment objective:** After replacing the MAIN PCB and BARREL, you must decide the AF search range so that the optimal focus can be identified by the body tube.

■ **Necessary equipment:** Infinity Callimator

<Adjustment method>

1. Save the adjustment file to the SD card and install it on the camera.

2. Refer to the following adjustment environment specification to adjust the focus.

1) Used specification of Infinity Callimator

- Set the illuminance specification of the Callimator to 6 LV.
- Maintain distance of less than 1cm between the end of the camera body tube to the lens surface of the Infinity Callimator.
- The camera must be fixed while the adjustment is made.

Fig. 5-5

2) Used specification for infinite object

- The camera must be fixed with a tripod and leveled condition must be maintained.
- Set up the camera toward a building or object in infinite distance (more than 500m). (Do not use the chart)
- Set a cathedral, partment or object with high contrast in day environment/AF area display.

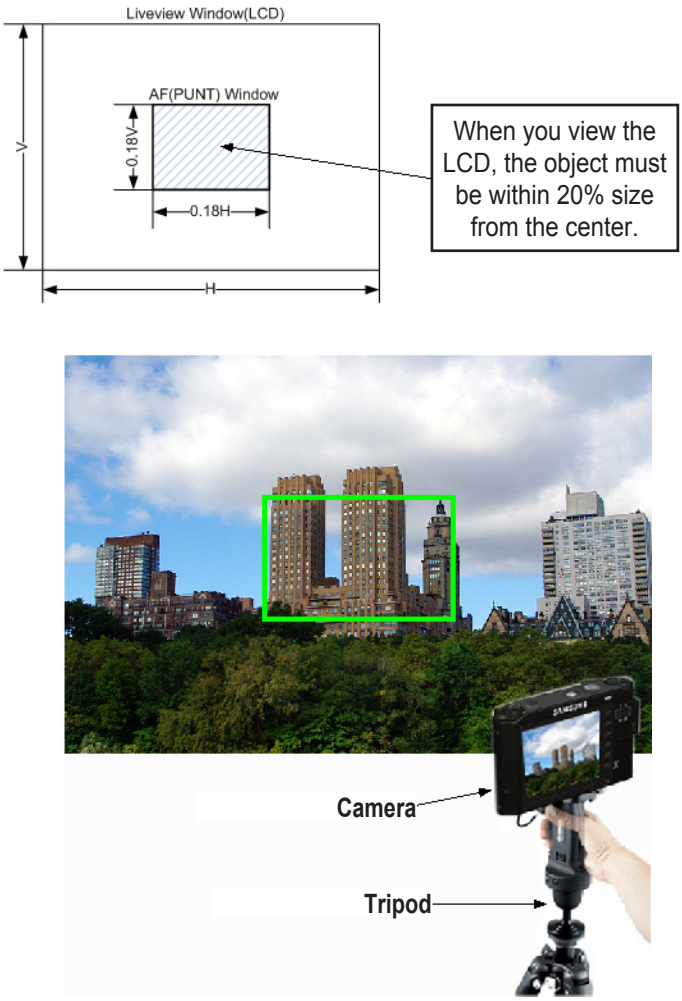


Fig. 5-6

⚠ Caution

■ **For the object, exclude full glass buildings or objects with low contrast, and this cannot be adjusted for night time. For the adjustment in these environments, AF may not be accurate when shooting Tele or Macro.**

3. Turn on the power of the camera.

4. The adjustment will automatically start.

<Adjustment result>

Open and check the CSV file generated from the adjustment memory card.

5-7 B/T Level ADJ

■ Adjust the level of reference voltage to display the battery condition by each camera.

<Adjustment method>

1. Prepare the POWER SUPPLY.

2. Use the battery jig to connec the POWER SUPPLY to the camera.

3. Set to voltage of 3V.

4. Save the applicable adjustment file to the SD card.

5. After inserting the SD card containing the program file, turn on the power of the camera.

6. The adjustment will automatically start. This is not displayed on the screen.

❶ Execute A/D Conversion of the current power supply condition.

❷ After the A/D conversion value of the current power supply voltage is measured, check whether it falls within the error range. (Idle mode)

[Min A/D conversion value] <= [A/D conversion value of power supply voltage] <= [Max A/D conversion value]

❸ Refer to the warning and prohibition label to execute the check.

❹ Refer to the EEPROM WRITE information and write the adjustment result to EEPROM.

❺ Refer to the CARD WRITE INFORMATION to write the adjustment result to the data file.

7. When the adjustment is completed, the camera will automatically be turned off.

5-8 CCD Defect ADJ

■ Calibrate the Defective pixel of CCD for each camera.

<Adjustment method>

1. Save the applicable adjustment file to the SD card.

2. After inserting the SD card containing the program file, turn on the power of the camera.

3. The adjustment will automatically start.

❶ Check the set reference level, exposure time and loop, and execute the Defective Pixel calibration.

❷ Refer to the specification (Maximum number of defective cells) and execute the check.

❸ Refer to the CARD WRITE information to write the number of defective cells to the data file.

4. When the adjustment is completed, the camera will automatically be turned off.

<Adjustment result>

Open and check the CSV file generated from the adjustment memory card.

5-9 BackLash ADJ

■ Calibrate the error that occurs when the direction of the lens change by each camera.

<Adjustment method>

1. Save the applicable adjustment file to the SD card.

2. After inserting the SD card containing the program file, turn on the power of the camera.

3. The adjustment will automatically start.

❶ Close the body tube.
❷ After moving the body tube to Tele, calculate the error of PI count after it comes to Close.
❸ Repeat as many times as the count as above and obtain PI Count error sample to calculate the average.
❹ Judge whether the obtained average falls within the range of Max_backLash Range.
❺ Prepare the log file and move to Wide.

4. When the adjustment is completed, the camera will automatically be turned off.

<Adjustment result>
Open and check the CSV file generated from the adjustment memory card.

5-10 Burning ADJ

■ Repeatly operate various functions of the camera to detect sets with H/W or S/W defects.

<Adjustment method>

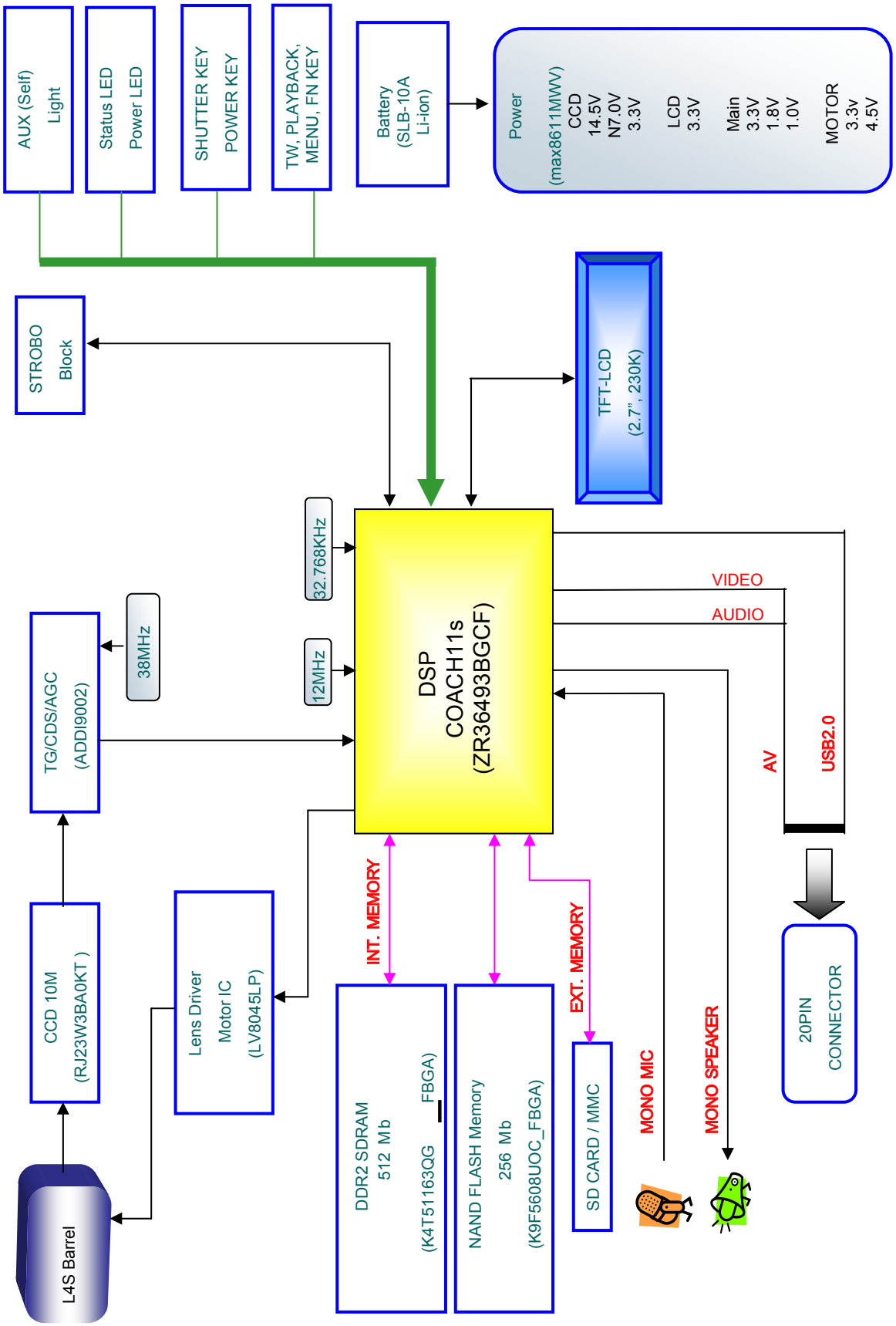
1. Save the Burning program to the SD card.

2. After inserting the SD card containing the program file, turn on the power of the camera.

3. The camera will automatically operate in the order of the set function.

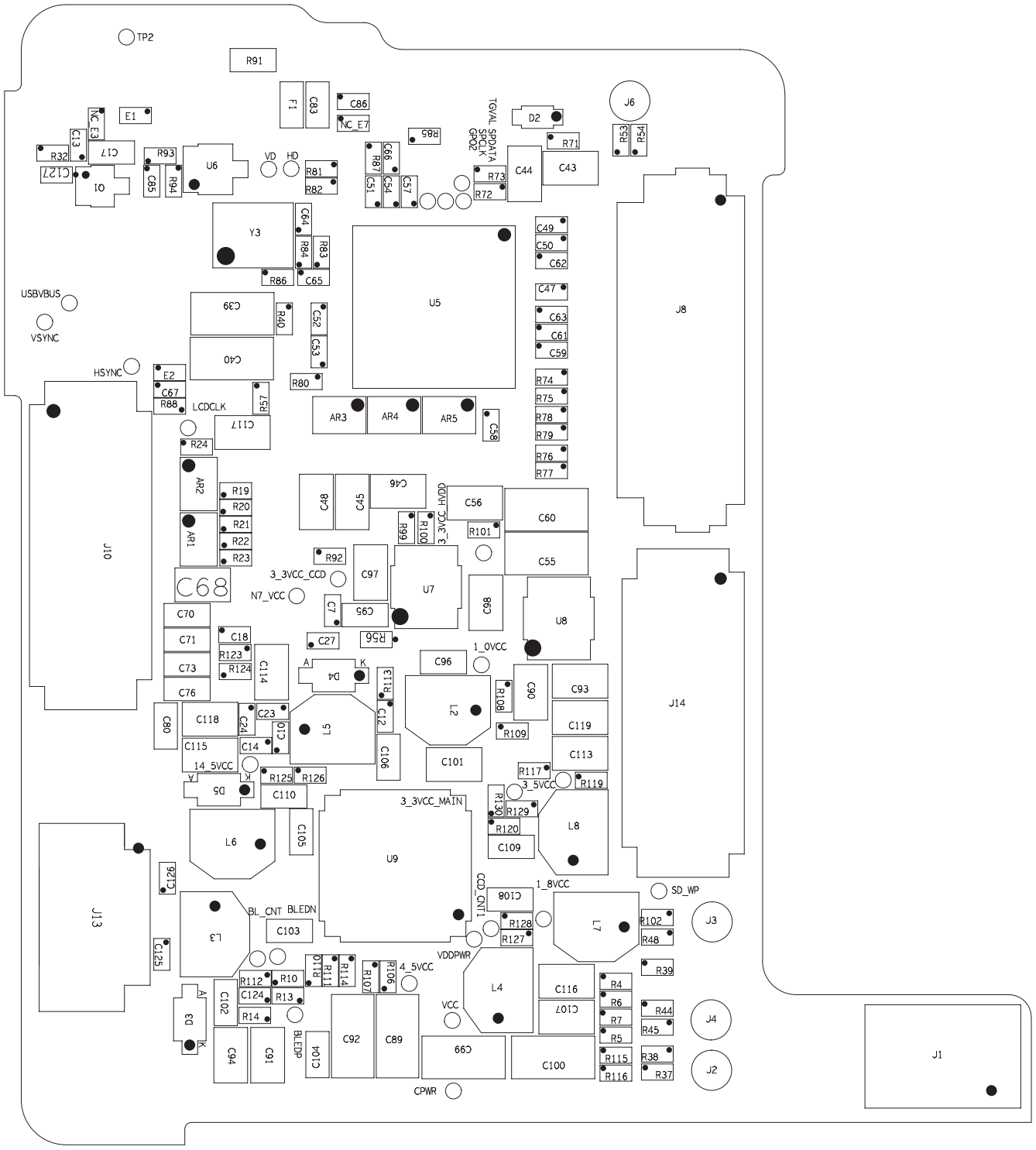
❶ Execute the Booting operation.
❷ Check the set operation cycle repetition, number of functional tests, function 1, function 2, ..., and execute the operation for each function.
* When the cycle of one function starts, the number of remaining cycles and completed function code are saved in EEPROM. (This is to classify the defective operation)
EEPROM address
- Mondrian_103: #744 (Burn count), #746 (Cycle in progress)
❸ When the Burning process is completed, the power will automatically be turned off.

6. Block Diagram



7. PCB Diagrams

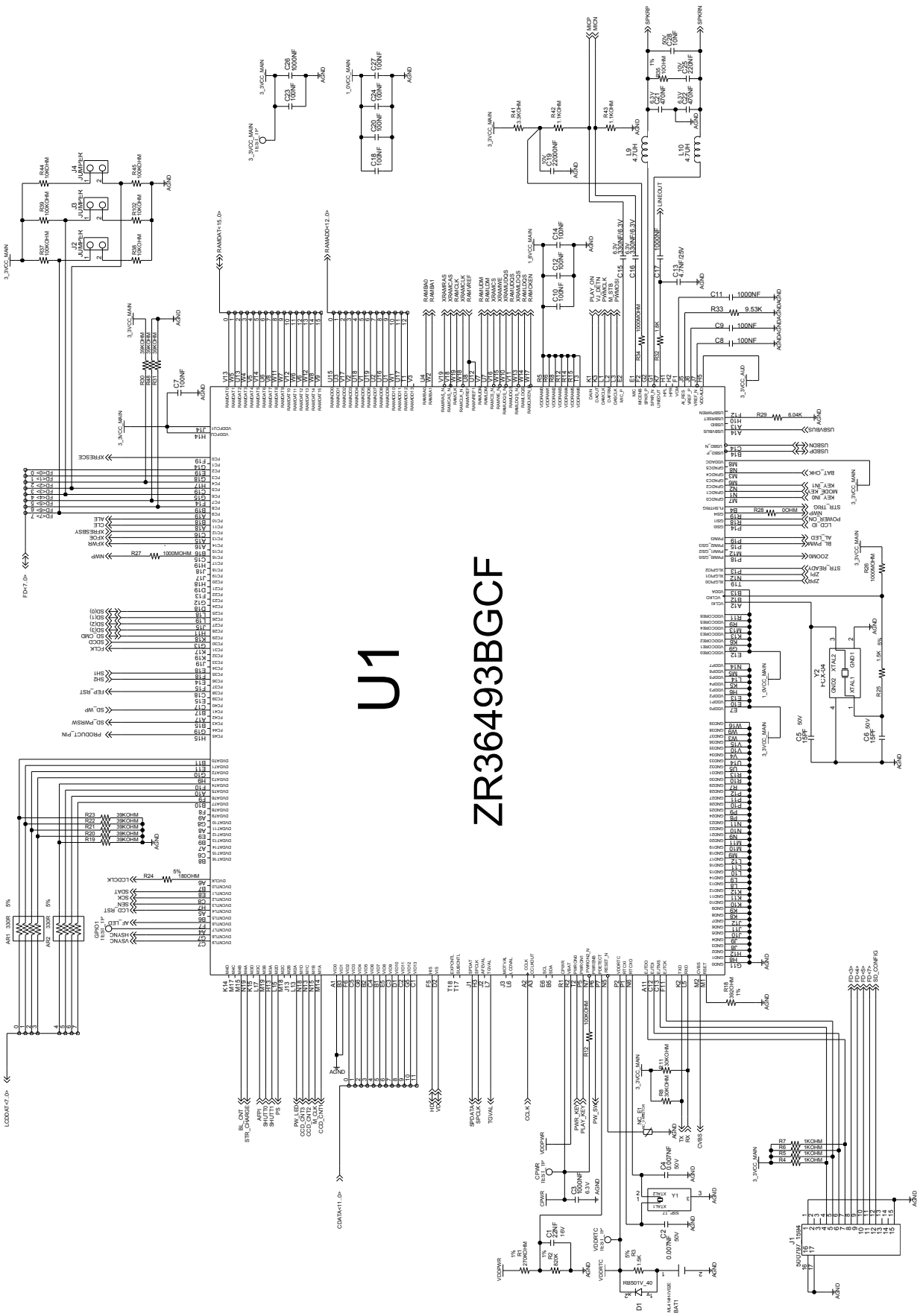
7-1 Main PCB (TOP)



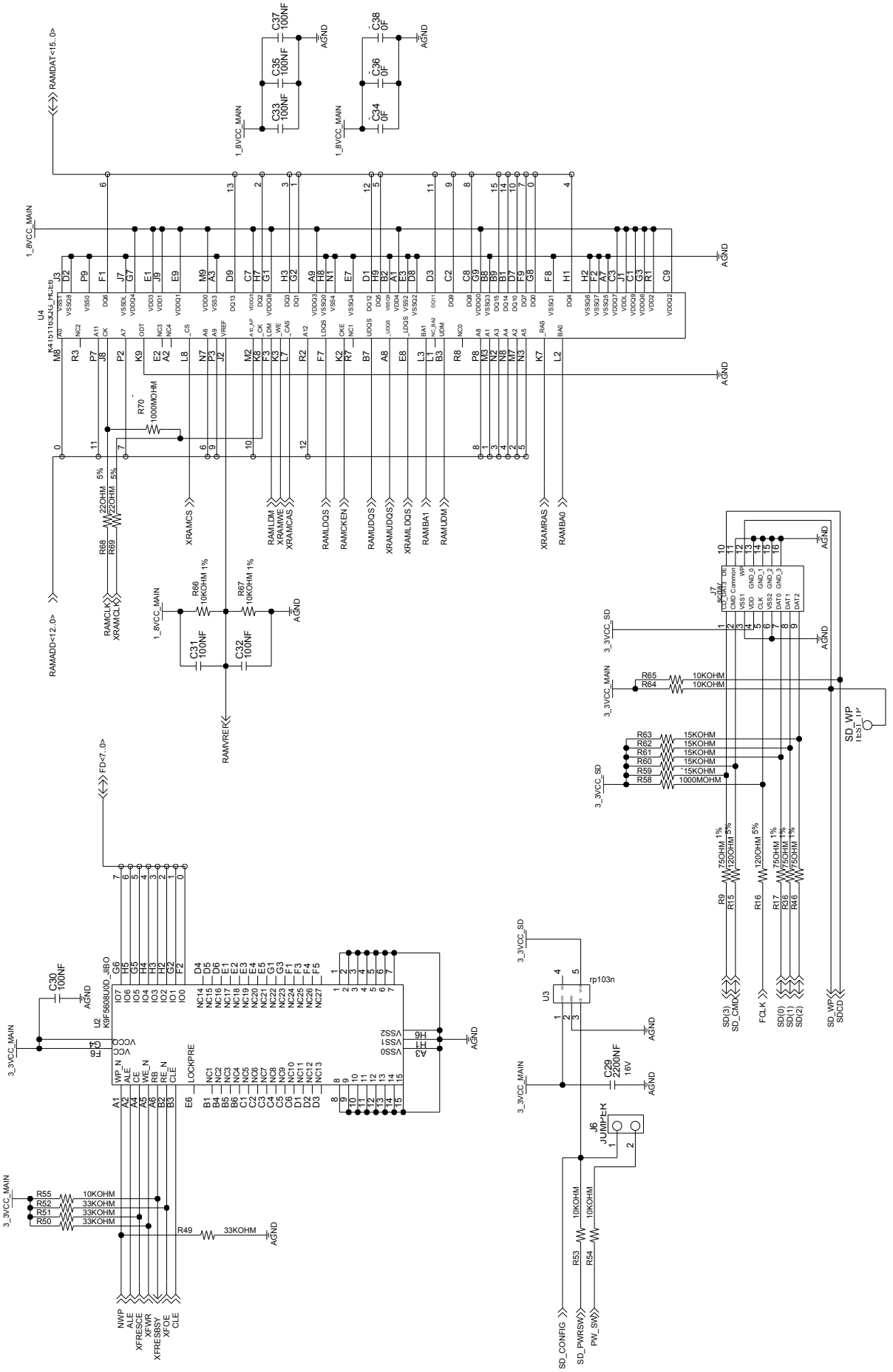
7-2 Main PCB (Bottom)

8. Schematic Diagrams

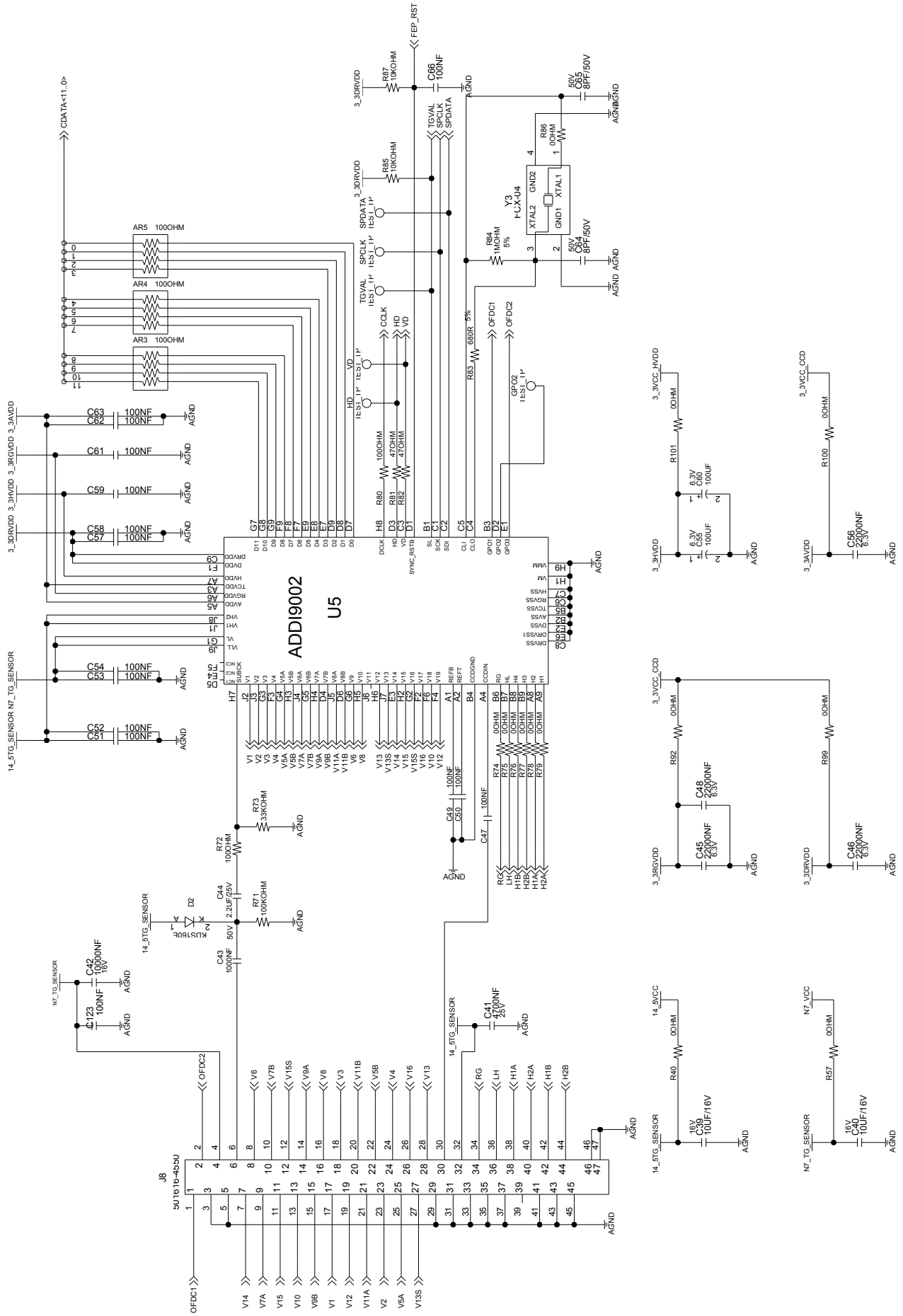
8-1 Main PCB-1



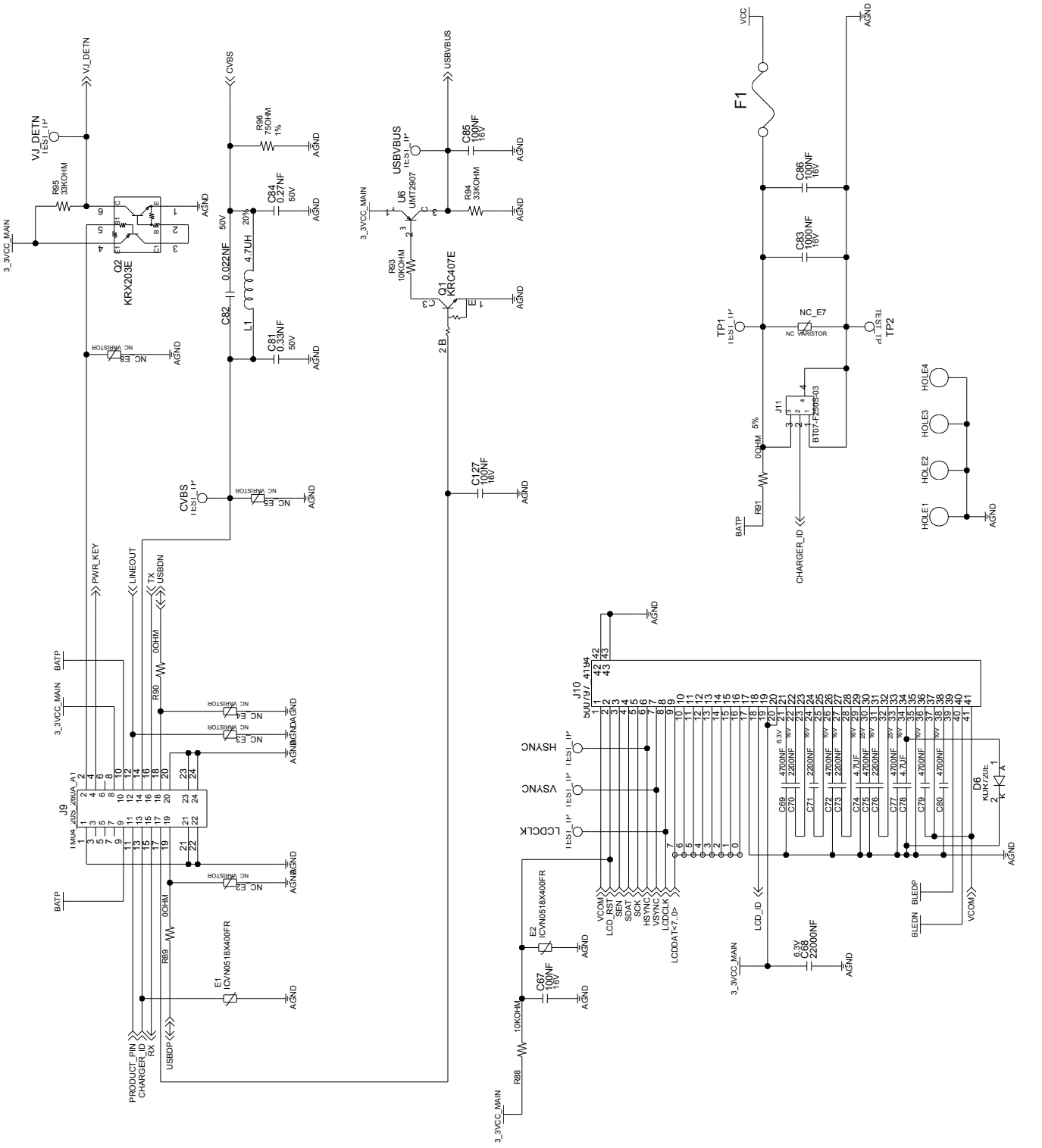
8-2 Main PCB-2



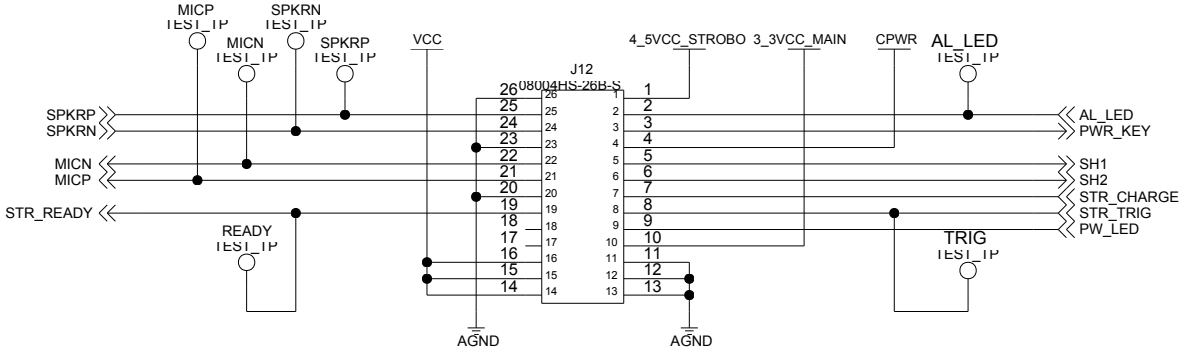
8-3 Main PCB-3


ADDI9002
U5
J8
CDATA<11..0>
FEP_RST
OFDC1
OFDC2
14_5TG_SENSOR
N7_TG_SENSOR
3_3RGVDD
3_3DRVDD
3_3HVDD
3_3AVDD
3_3VCC_HVDD
3_3VCC_CCD
14_5VCC
N7_VCC
AGND

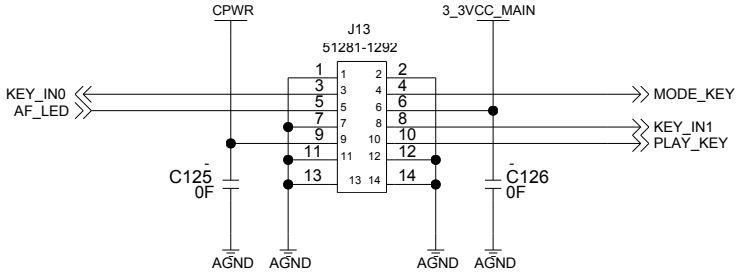
8-4 Main PCB-4



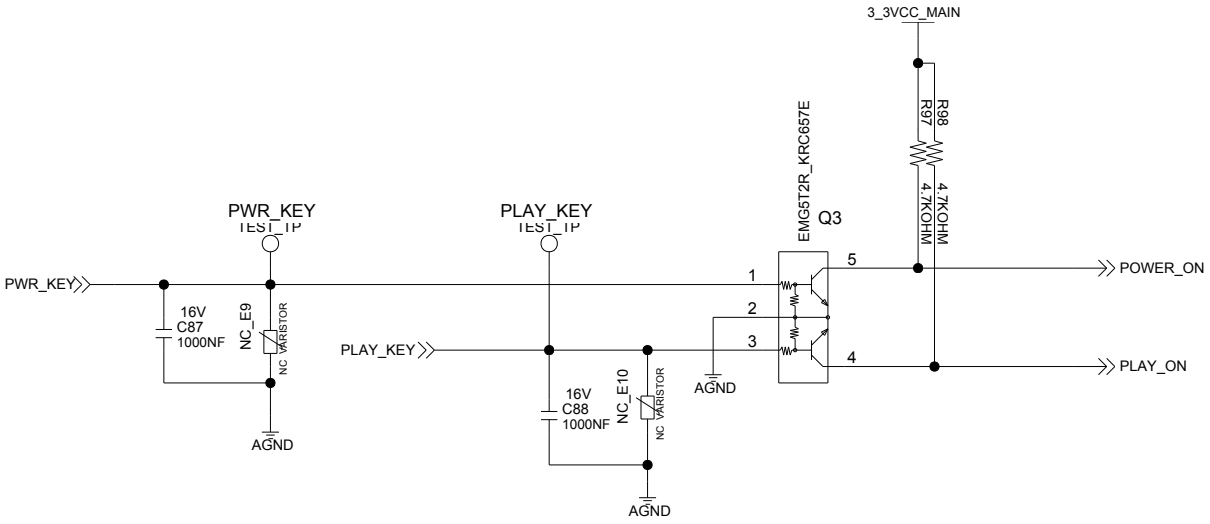
8-5 Main PCB-5



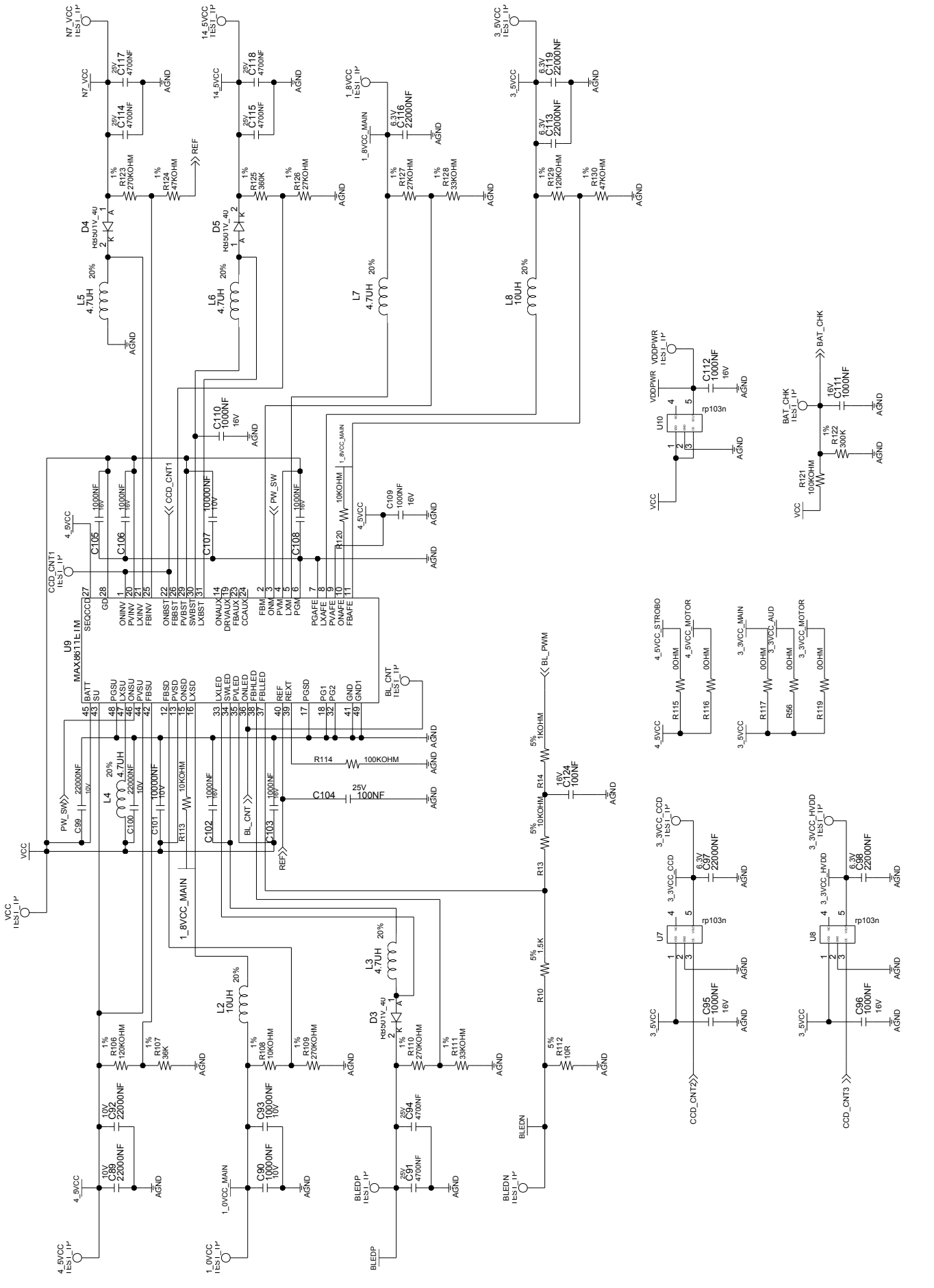
TOP CONNECTOR



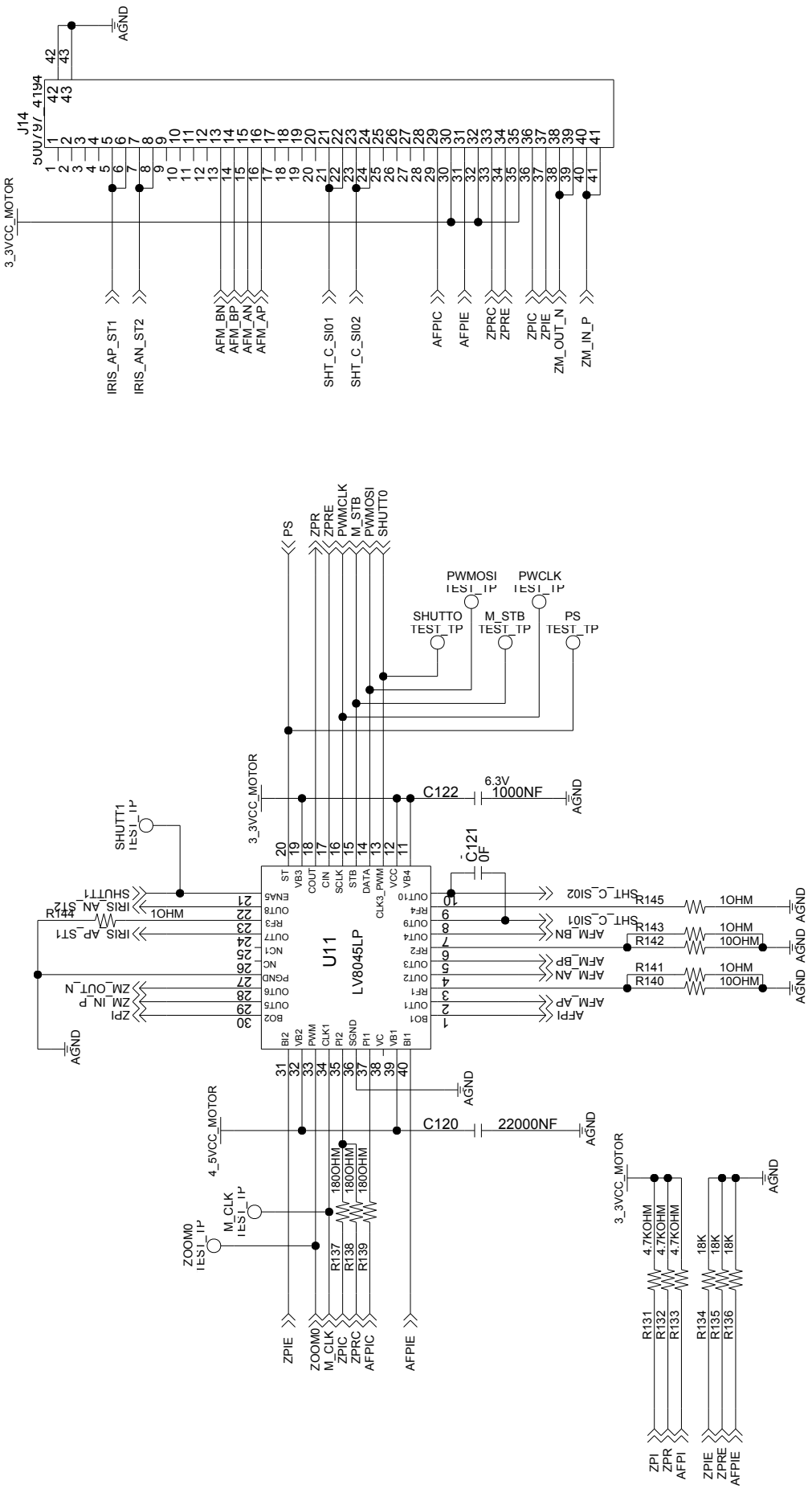
KEY(OIS) CONNECTOR



8-6 Main PCB-6



8-7 Main PCB-7


J14
AGND
3_3VCC_MOTOR
IRIS_AP_ST1
IRIS_AN_ST2
AFM_BN
AFM_BP
AFM_AN
AFM_AP
SHT_C_SI01
SHT_C_SI02
AFPIC
AFPIE
ZPRC
ZPRE
ZPIC
ZPIE
ZM_OUT_N
ZM_IN_P
PS
ZPR
PWMCLK
M_STB
PWMOSI
SHUTT0
SHUTTO TEST_TP
M_STB TEST_TP
PS TEST_TP
SHUTT1
C122
6.3V
1000NF
C121
0F
U11
LV8045LP
R144
1OHM
R145
R143
R142
R141
R140
10OHM
4_5VCC_MOTOR
C120
22000NF
M_CLK
ZOOM0
180OHM
R137
R138
R139
4.7KOHM
R131
R132
R133
18K
R134
R135
R136
ZPI
ZPR
AFPI
ZPIE
ZPRE
AFPIE

9. Disassembly and reassembly

9-1 Disassembly of main unit

⚠ Precaution for disassembly/reassembly

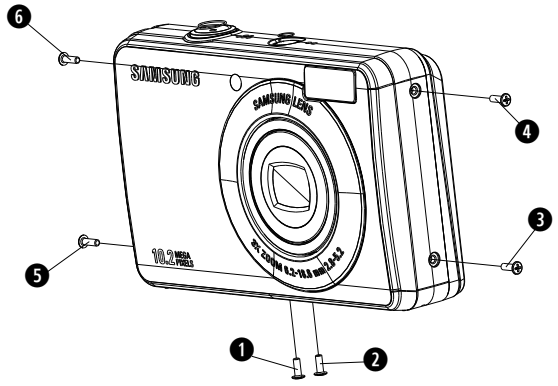
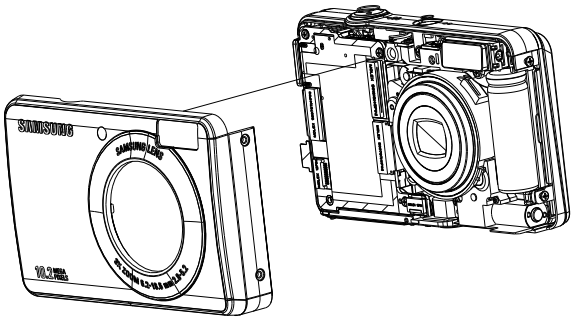
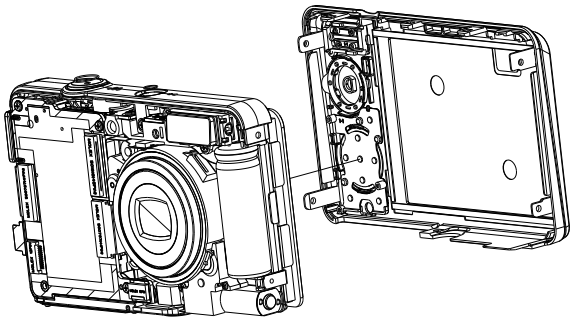
1. Set up the repair table where the anti-static mat is installed to disassemble and reassemble the camera.

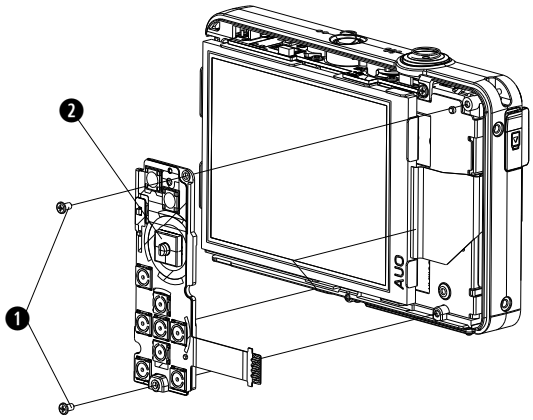
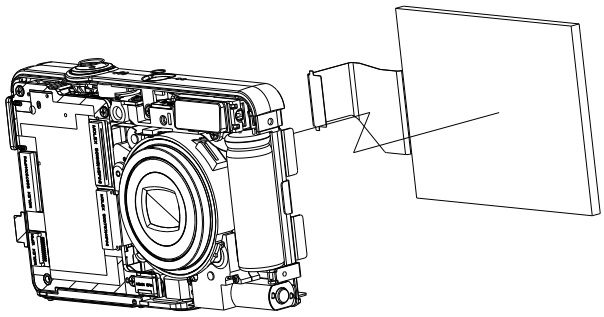
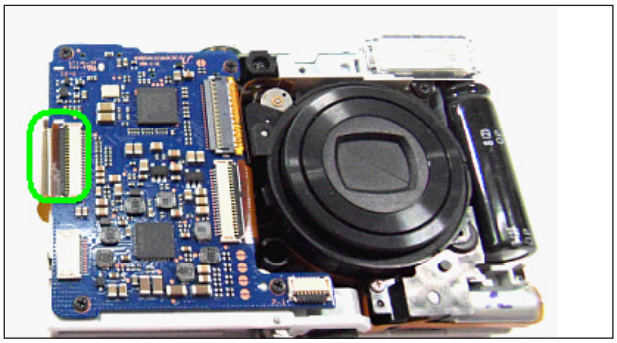
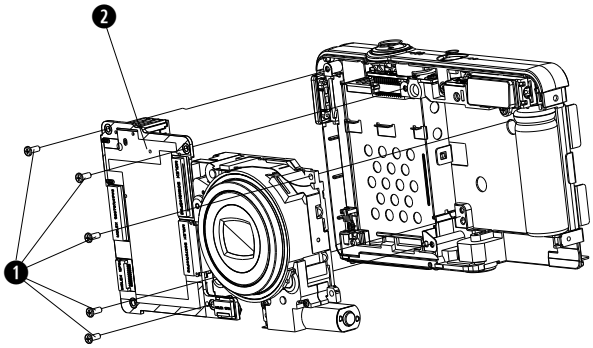
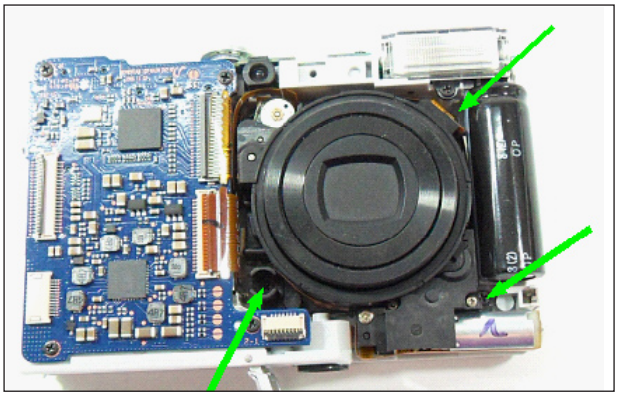
2. When handling the key PCB of the camera, wear the anti-static band on the wrist to prevent any error from static electricity.

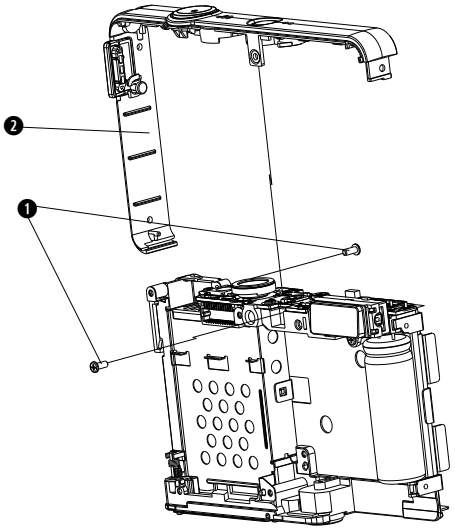
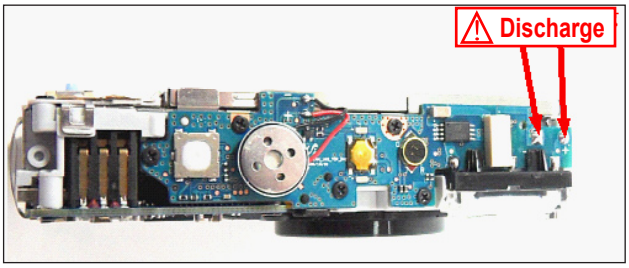
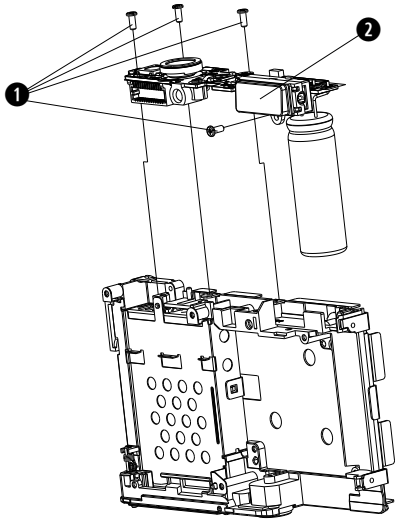
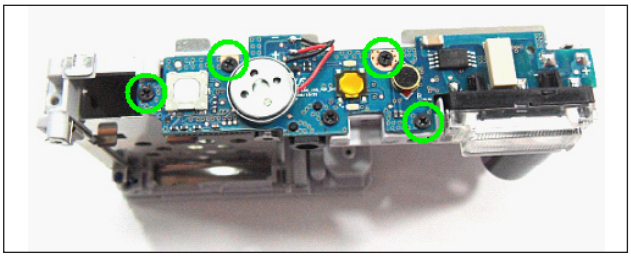
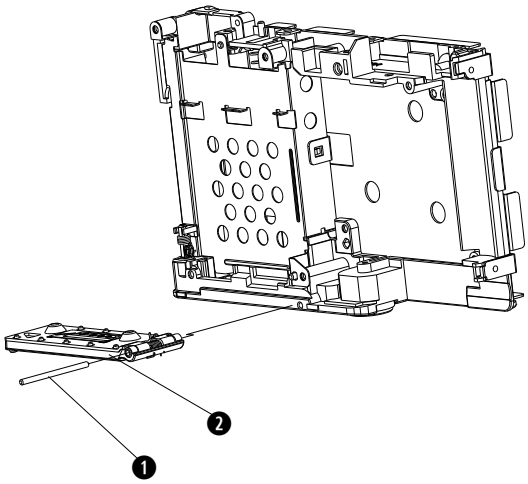
3. When handling key parts, be careful of the following.

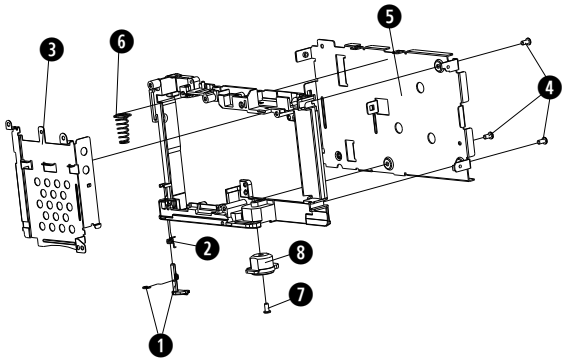
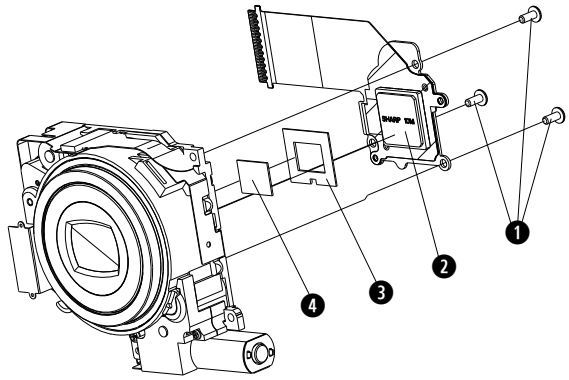
<Table 9-1>

Part	Precaution
F PCB Type	When assembling the F PCB to the CONNECTOR with a pin set, be careful not to cause dents or tears on the PCB.
CCD and IR CUT	When handling the parts, be careful not to leave any fingerprints. Use the pin set with soft tips. When cleaning the parts with alcohol, be careful not to cause any stains. Do the repair work in a dust free environment.
PCB Type	Always use the anti-static mat and wrist band, as the parts can be damaged from static electricity from the hand.
CONTACT Type	Be careful of damage of deformation of parts from the pin set.

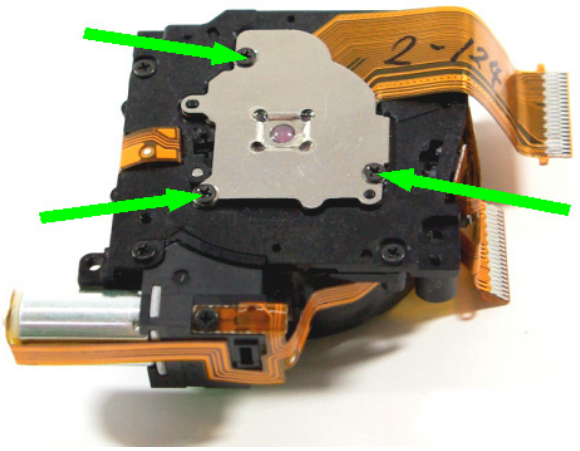
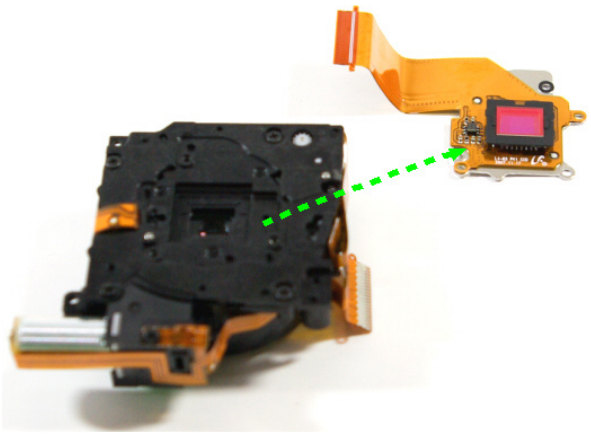
No.	Disassembly image	Disassembly description
1		1. Unscrew the unit in the order of ❶~❻.
2		2. Disassemble the Front Cover Assy.
3		3. Disassemble the Back Cover Assy

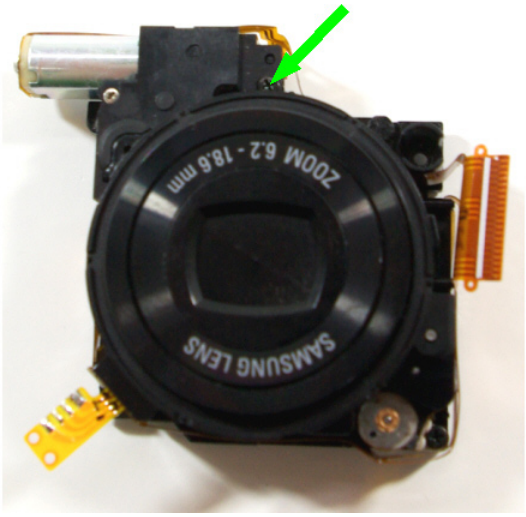
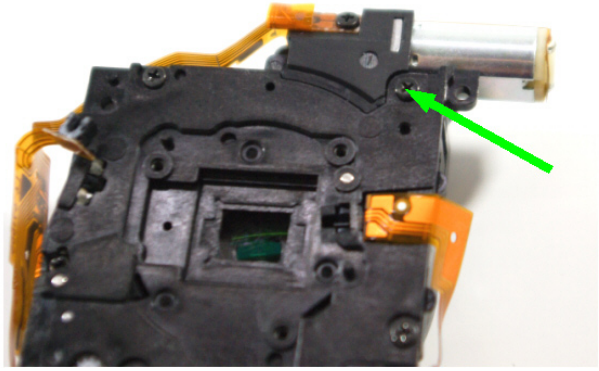
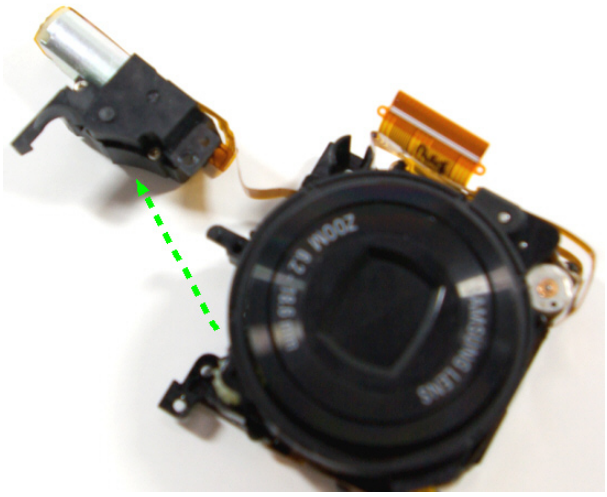
No.	Disassembly image	Disassembly description
4		1. Unscrew 2 screws. 2. Disassemble the Back Key.
5		2. Disassemble the LCD Assy PCB on Main PCB Connector. 
6		1. Unscrew 5 screws. 2. Disassemble the Back Key Main PCB, Barrel. 1) Barrel 

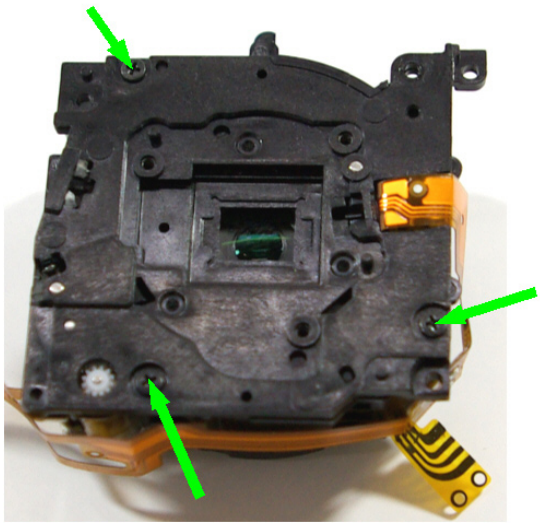
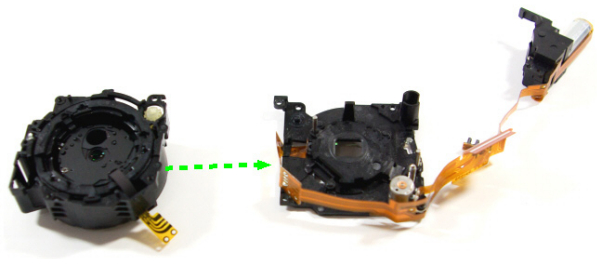
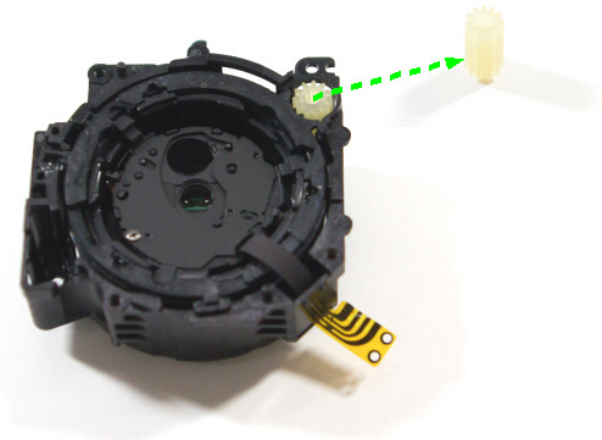
No.	Disassembly image	Disassembly description
7		1. Unscrew 2 screws. 2. Disassemble the Middle Cover Assy. ※ ⚠ **Check discharge point** (It must be processed for discharge to the main condenser as shown in the below picture.) 
8		1. Unscrew 3 screws. 1. Unscrew 4 screws on FLASH PCB ASSY. 
9		1. Disassemble the Hinge Battery Cover. (Push from Back Cover side to Front Cover side to disassemble) 2. Disassemble the Cover Battery Assy.

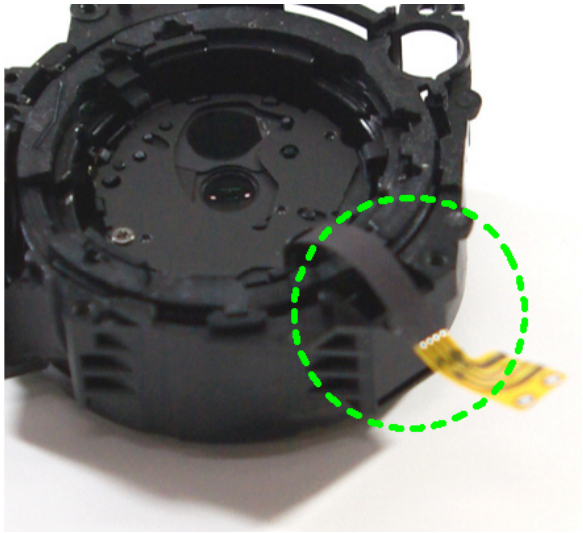
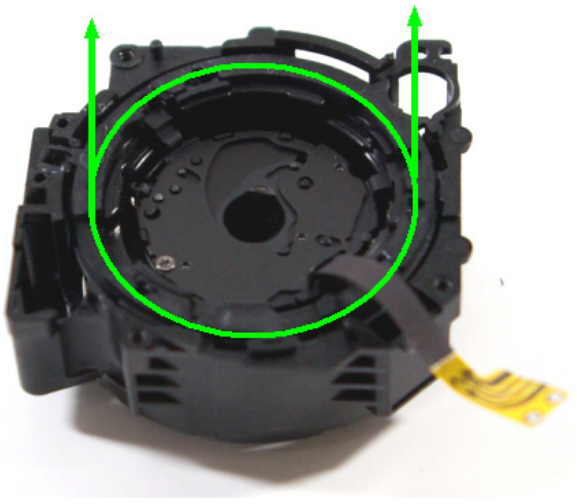
No.	Disassembly image	Disassembly description
10		1. Disassemble the E-ring on Lever Battery Lock. 2. Disassemble the Spring-TS (LOCK LEVER). 3. Disassemble the Plate Battery Holder. (Separate the Hook connector from the Frame Main.) 4. Unscrew 3 Screw. 5. Disassemble the Frame Main. 6. Disassemble the Spring-CS (BATTERY PUSH). 7. Unscrew 1 Screw. 8. Disassemble the Holder-Tripod.
11		1 .Unscrew 3 Screw. 2. Disassemble the CCD pcb Assy. 3. Disassemble the Rubber CCD Sealing. 4. Disassemble the IR Cut Filter.

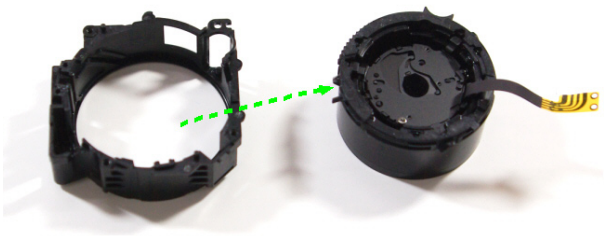
9-2 Barrel disassembly

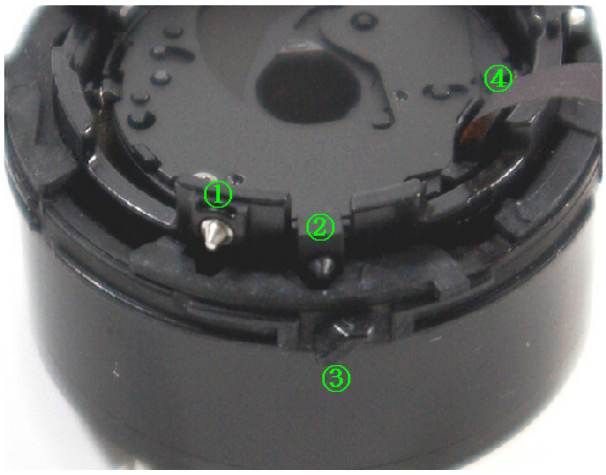
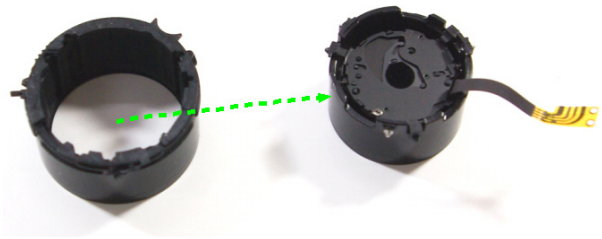
No.	Disassembly image	Disassembly description
1		1 .Unscrew 3 Screws.
2		2. Disassemble the CCD PCB ASSY.
3		3. Remove the Shutter PCB soldering.

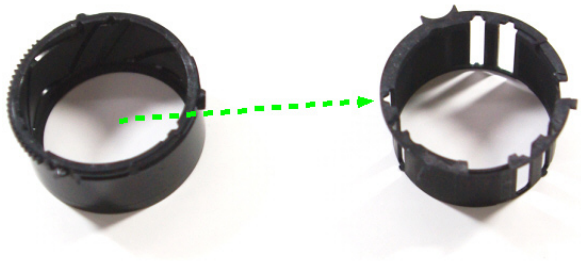
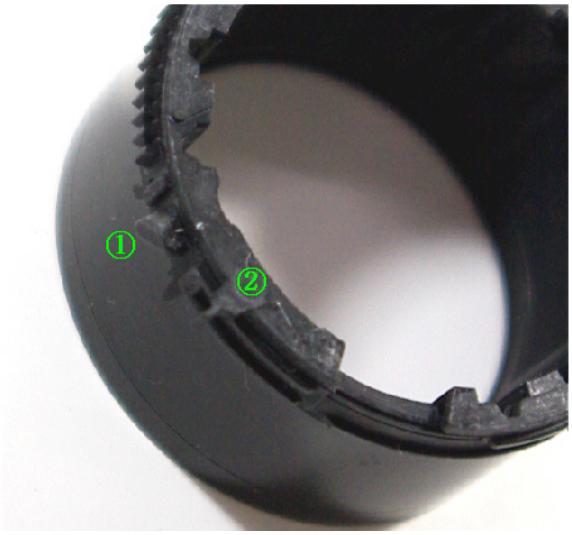
No.	Disassembly image	Disassembly description
4		4. Unscrew 1 screw on the front part of the ZOOM gear BOX.
5		5. Unscrew 1 screw on the rear part of the ZOOM gear BOX.
6		6. Disassemble the ZOOM Gear BOX.

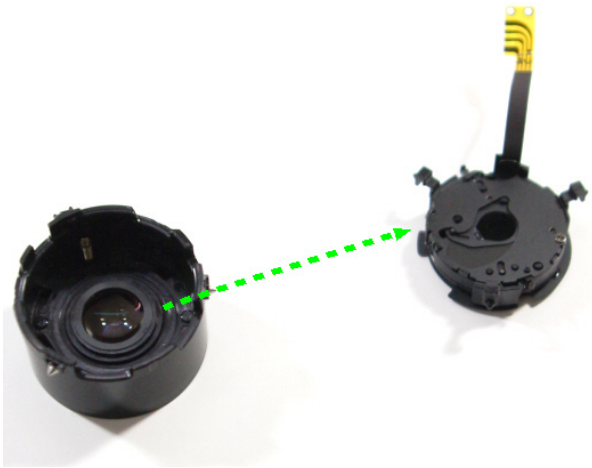
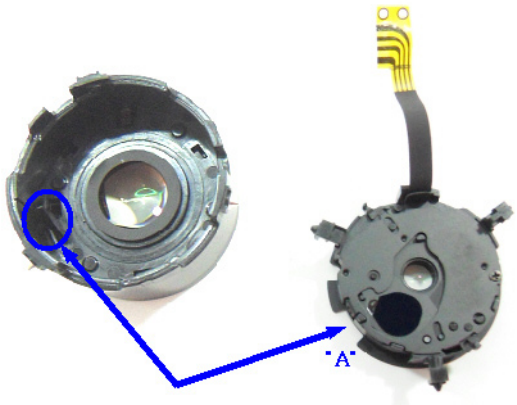
No.	Disassembly image	Disassembly description
7		7. Unscrew 3 Screws.
8		8. Completely disassemble the LENS BASE ASSY.
9		9. Disassemble the ZOOM gear.

No.	Disassembly image	Disassembly description
10		10. Move the shutter PCB as shown in the picture.
11		11. Process the shutter PCB as shown in the picture.
12		12. Disassemble the OUTER GUIDE BARREL based on the blue part as shown in the picture.

No.	Disassembly image	Disassembly description
		Reassemble while referring to POINT ① and ②.
13		13. Disassemble the OUTER GUIDE BARREL.
14		14. Disassemble the INNER CAM BARREL ASSY based on the blue part as shown in the picture.

No.	Disassembly image	Disassembly description
		**Reassemble while referring to the boss part of POINT ①, ② and ③, and shutter PCB location of ④.**
15		15. Disassemble the INNER CAM BARREL ASSY.
16		16. Disassemble the INNER CAM BARREL ASSY based on the blue part as shown in the picture.

No.	Disassembly image	Disassembly description
17		17. Disassemble the INNER CAM GUIDE.
		**Reassemble while referring to POINT ① and ②.**
		When the locations of the above POINT ① and ② are accurate, you will see two grooves on the inner side of the INNER CAM GUIDE.

No.	Disassembly image	Disassembly description
18		18. Disassemble the SHUTTER ASSY.
		Assemble part “A” of the shutter so that it is located in the LENS CAP LEVER.